

Stormwater Management Business Area Department of Public Works and Environmental Services ENVIRONMENTAL SCAN

FINAL

April 8, 2003



“Protecting Our Land and Our Water”



Prepared by AMEC Earth & Environmental, Inc., Chantilly, Virginia
Under contract to the Fairfax County Department of Public Works and Environmental Services

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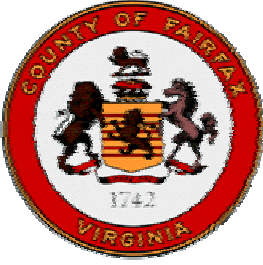
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Stormwater Management Business Area

Department of Public Works and Environmental Services

ENVIRONMENTAL SCAN

FINAL

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1 Introduction and Methodology

This report presents an Environmental Scan for the Fairfax County Department of Public Works and Environmental Services Stormwater Management Business Area (STW). The Scan was performed during the first quarter of 2003 with the assistance of AMEC Earth & Environmental, Inc.

The goal of the Environmental Scan is to provide a “snapshot” of the internal and external issues and trends that face the STW in its current and future work. The purpose of the Scan is to promote future-oriented thinking in both the management and staff of the STW. The Scan will also provide strategic intelligence that will be used during the development of the STW’s Strategic Plan. While the STW conducts business every day within the confines of its environment, this report is intended to highlight trends that are converging, diverging, speeding up, slowing down, or interacting so that the STW can react and proactively and systematically address the new, the unexpected, the major and minor issues it will encounter.

This Scan is divided into two major sections: the external environment and the internal business of running the STW. The external environment considers the macro-environment in which Fairfax County resides, including social, economic, environmental, and political factors and trends. The STW’s direct and indirect stakeholders, e.g. employees, customers, political leaders, and other interested parties, have provided information regarding the internal environment.

Both primary and secondary sources were used to identify trends and to define potential threats, opportunities and changes for the program over the course of the next several years. The methodology behind the Environmental Scan consisted of the following tasks.

Task 1 – Development of Environmental Scan Parameters

An initial facilitated meeting of the STW Leadership Team was held on February 11, 2003. The primary objectives of the meeting were to:

- develop the parameters of the Environmental Scan;
- identify major existing information resources;
- review a staff questionnaire developed by the consultant;
- identify external stakeholders to be interviewed; and,
- provide an overview of a facilitated SWOT (Strengths, Weaknesses, Opportunities, and Threats) process.

Figure 1.1: Relationship of the Stormwater Management Business Area to the Department of Public Works and Environmental Services



Task 2 – Strengths, Weaknesses, Opportunities, and Threats (SWOT)

A SWOT process was facilitated by the consultant at an all-day meeting on March 6, 2003. Participants consisted of the primary members of the STW and several in-County stakeholders. A SWOT analysis examines strengths and weaknesses (internal to the organization) and opportunities and threats (external to the organization). Participants ranked the results to arrive at top issues in each area. Table 1.1 presents the summary results of that analysis. Appendix B presents the full results of the SWOT analysis.

Task 3 – Analysis of Secondary Materials

The consultant conducted a review and analysis of secondary materials to support the Environmental Scan. The review consisted of the following:

- documents, studies, and other information provided by Fairfax County staff; and,
- State and federal regulations pertinent to the Fairfax County program, as jointly identified by the consultant and by Fairfax County staff.

In addition, the consultant, with the assistance of the STW, conducted a representative survey of internal and external stakeholders between the initial meeting and the SWOT meeting. The survey consisted of the following:

- an electronic survey sent to all members of the STW and the Office of Site Development Services (OSDS);
- an electronic survey sent to 10 individuals within the County but outside of the STW; and,
- face-to-face meetings with STW business area customers/stakeholders.

Nineteen individual members of the STW responded to the survey; in addition, facilitated meetings of the STW field crews yielded four collective responses. Four surveys were returned from individuals within the County but outside of the business line. Eight 30 to 60 minute face-to-face meetings were conducted with outside stakeholders and one in-County stakeholder. Stakeholders consisted of one regional government representative, three consultant/industry representatives, one representative from Fairfax County Fire and Rescue, and three civic/environmental representatives.

The summary results of the outside stakeholder interview process are presented in Appendix C.

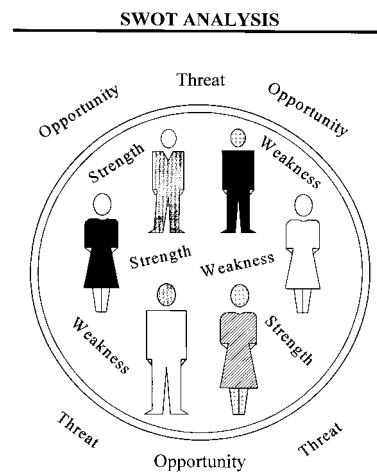


Table 1.1: Summary Results of SWOT Analysis by Priority¹

INTERNAL ENVIRONMENT	
STRENGTHS	WEAKNESSES
<ol style="list-style-type: none"> 1. Emergency response. 2. Versatility in tasks and programs. 3. Institutional knowledge. 4. Not overly perfectionist → get more done/balancing rules, responsibilities and risks. 5. Talented workforce. 6. Good problem-solving skills → make things work. 7. Ability to reallocate resources within programs. 8. Can do attitude “where there is a will there is a way.” 9. Good fiscal control. 10. Ability to incorporate technology and innovation. 11. In tune with existing impending regulations. 12. Diversity, both in terms of people and opinions. 	<ol style="list-style-type: none"> 1. Limited Term Exempt (LTE) employees create scheduling difficulties and morale problems. 2. Inter-departmental communication and cross-cutting outreach among County divisions. 3. Lack sense of identity: what do we do? → “stormwater” leads to various interpretations. 4. No dedicated funding source to accomplish what needs to be done. 5. Opportunities for upward mobility limited. 6. Overall outreach efforts lacking. 7. Policy level lack of integration between OSDS and STW → lack of integration between planning and implementation processes. 8. History of being reactive versus strategists. 9. Losing too many well-qualified people to retirement. 10. Cannot replace staff due to inadequate pay compared to other opportunities. 11. Fixes of infrastructure are often short-term, not long-term. Costs more in the long run.
<ol style="list-style-type: none"> 1. Political support from the Board of Supervisors. 2. Healthy citizen interest in the environment. 3. Proactive watershed planning. 4. Federal/state grant opportunities, outside funding. 5. Heightened awareness due to negative visible conditions, e.g., West Nile Virus, etc.). 6. Retrofitting of stormwater management facilities to BMPs through the County’s redevelopment/revitalization plans. 7. Environmental stewardship has been integrated into the County Executive’s vision and mission. 8. Collaboration with external councils and commissions (Tree Commission, EQAC, Planning Commission, etc.) that have a vested interest in environmental issues. 9. Changes to County’s organizational structure that are environmentally supportive. 10. County-wide focus on strategic planning provides opportunities for intra-County alignment, collaboration, etc. 11. Build on past successes. 	<ol style="list-style-type: none"> 1. Lack of consistent funding source and loss/reduction of funding – competing with other County functions (schools, F&R, IT). 2. Frequent changes in management philosophy, e.g., HPO → what’s next? 3. Overly high citizen expectations given resources. 4. Development community pressure, e.g., opposition to regulation, poor construction/inspection. 5. Lack of well organized grass roots buy-in/support for current programs. 6. Changing/new regulations (unfunded mandates) Tributary Strategies, TMDLs, ADA, etc. 7. RIF/staff reductions. 8. Poor support/coordination with other County and outside departments, e.g., FCPA, VDOT → (lack of unified County vision, strategy). 9. Unplanned, short notice initiatives with high emotions (West Nile Virus/public health/terrorism). 10. Limitations of existing facilities. 11. Perceived savings from privatization.
OPPORTUNITIES	THREATS
EXTERNAL ENVIRONMENT	

¹ See Appendix A for list of acronyms.

2 External Environment

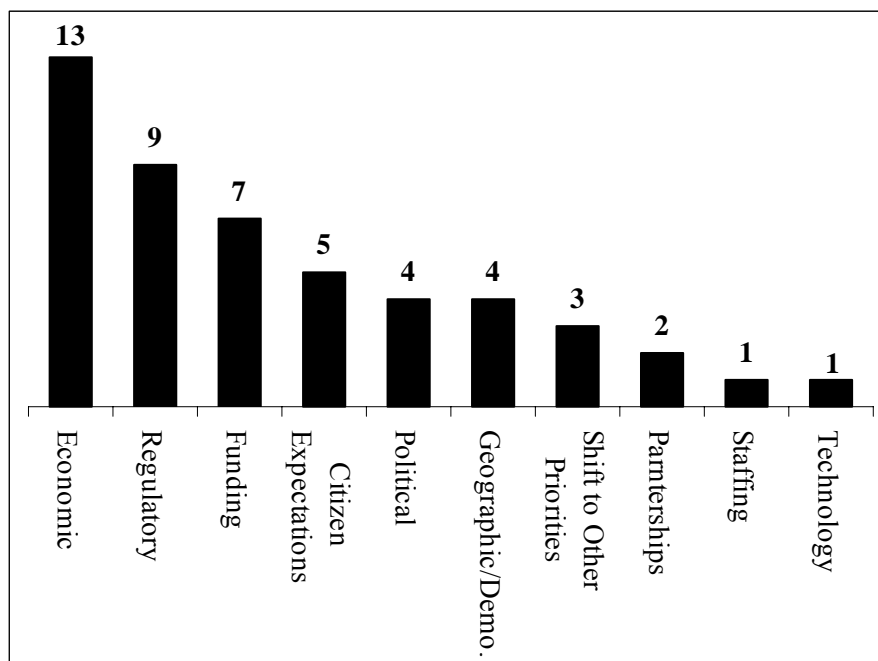
A scan of the external environment consists of identifying changing trends and patterns, monitoring specific trends and patterns, forecasting the future directions of these changes, and assessing the impact on the organization. Between February 11, 2003 and March 6, 2003, the consultant collected questionnaires from County staff and interviewed eight external stakeholders and asked what each group considered to be the major external factors affecting the STW's environment. The answers to this question provides the framework for this section. Table 2.1 is a summary of the external stakeholder answers ordered by number of times cited. Figure 2.1, by comparison, provides an overview of internal stakeholder response categories.

Overall, both external and internal stakeholders cited economic factors as having the greatest impact on the business area, primarily from the standpoint that in lean economic times stormwater will not compete well for resources against education, fire and rescue, police/security, health and human services, etc. Regulatory, funding, and demographic factors also figured prominently in the responses. The following sections provide additional detail regarding major external factors.

Table 2.1: External Factors Cited by External Stakeholders

Factor Area	Stakeholder Comments
Political/Economic	<ul style="list-style-type: none"> Political environment will dictate mission and ability to finance plans. The budget is the biggest external factor. The failure to consider a stormwater utility has been a tremendous blow to the stormwater program. The combination of economics and politics. Stormwater program needs money; the problem is how to use the political process to get this money. Reluctance to implement a utility fee.
Regulatory	<ul style="list-style-type: none"> Regulatory change from the State and federal levels. Current Chesapeake Bay Preservation Ordinance issues will have a substantial impact. Difficulty in enforcing erosion and sediment control measures. Getting a hold on the TMDL process before it takes on a life of its own. More TMDLs will need to be developed for benthic impairments. Chesapeake Bay Agreement and Tributary Strategies will result in nutrient and sediment load caps. The Bay Program at the federal level will take on a more regulatory flavor.
Demographics/Development	<ul style="list-style-type: none"> As redevelopment of lower density areas to higher densities occurs, there will be a greater potential for runoff to affect local streams. Demographically, if the County continues to grow, there will be more and more impervious surface cover to manage. The County is built-out. The PFM and other regulations are oriented toward large scale new development. The County is moving into an infill and redevelopment mode.
Other County Agencies	<ul style="list-style-type: none"> Needs to be a greater connection between Office of Site Development Services and STW.
Public Perception	<ul style="list-style-type: none"> Public perception is that all the STW does is study. STW is following the same path with its watershed planning process. All the money will be used up in the planning and there won't be anything left for effective implementation.

Figure 2.1: Summary of External Factors Cited by Internal Stakeholders



2.1 Economic Data

Virginia's Budget Crisis

Virginia's economic fortunes have suffered significantly since the late 1990s and early 2000s, which has been reflected in recent State budget cuts.

- General fund revenues at the State level fell from \$11,105.3 million in FY 2001 to \$10,678.9 million in FY 2002.
- Estimated FY 2003 general fund revenues are expected to increase only slightly to \$10,780.8 million.²
- FY 2003 funding for Natural Resources agencies was retroactively cut in the amount of \$24.6 million in October, 2003. Additional reductions to the FY 2003 budget were also made during the 2003 General Assembly. This affected the STW by eliminating/reducing the following resources:
 - Chesapeake Bay Local Assistance Department funding for the Northern Virginia Soil and Water Conservation District and for comprehensive planning assistance; and,
 - Virginia Water Quality Improvement Act funding to implement the Potomac Tributary Strategy.

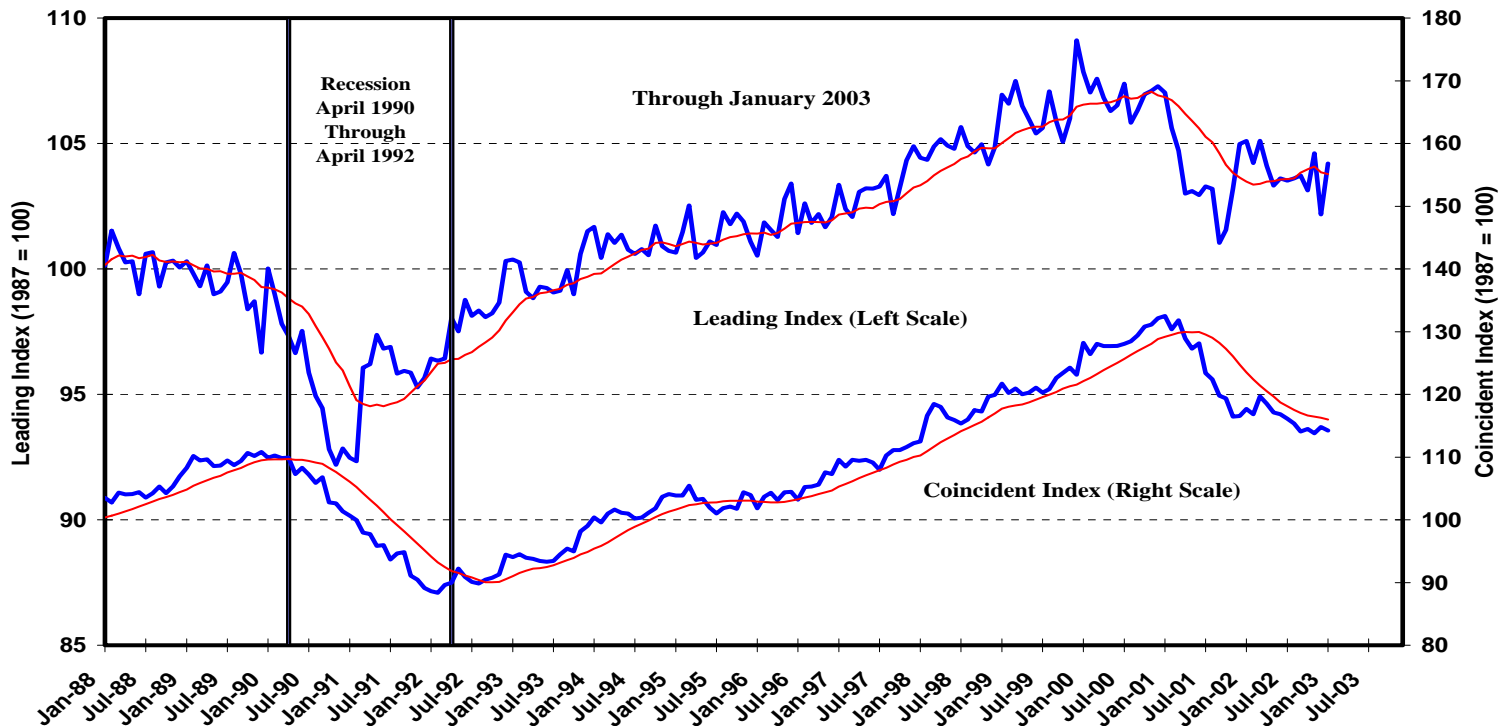
Fairfax County Economic Conditions

Fairfax County's economy has suffered a similar slow-down. According to the latest Fairfax County Coincident Index,³ which represents the current state of the County's economy, the economy continued to weaken and/or stay flat through January 2003.

² Virginia Department of the Treasury, January, 2003.

The Fairfax County Leading Index, designed to forecast the performance of the County's economy nine to 12 months in advance, increased in November. While this does not address the immediate fiscal crisis in Fairfax County, it may indicate a shift in long-term trends.

Figure 2.2: Fairfax County Economic Indicators (Through January, 2003)



Tight Labor Market

Despite a flat economy, the Fairfax County labor market remains tight. This affects the STW in terms of both retention and recruitment of qualified personnel.

- Northern Virginia has a 1.2 million person employment base.
- During 2002, the economy shed 13,000 jobs, or approximately 1.1%.
- The unemployment rate for the region remains at 2.5%, with Fairfax County at 2.3% in December 2002; the Virginia and national unemployment average is 3.6% and 5.7% respectively.
- Most job losses have come from the high-technology business services and telecommunications. Other sectors remain highly competitive.⁴

Limited Solutions to Raising Revenue

Because Virginia is a Dillon Rule state, meaning that local governments only have those powers expressly delegated to them through enabling legislation, potential solutions to stormwater funding are limited. Primary and secondary funding methods available to the County are presented in Table 2.2.

³ George Mason University Center for Regional Analysis, April 2003.

⁴ Virginia Employment Commission, January 2003.

Table 2.2: Primary and Secondary Stormwater Management Funding Sources in Virginia

Primary Funding Methods	Secondary Funding Methods
<ul style="list-style-type: none">• General Fund Appropriations• Stormwater Service Fees (Stormwater Utility)• General Obligation and Revenue Bonding	<ul style="list-style-type: none">• Special Assessments• Watershed Improvement Districts• Federal and State Funding/Grants• Pro-Rata Shares• In-Lieu-Of-Construction Fees• Other Service Fees

Fairfax County has a Pro-Rata Share Program and one Watershed Improvement District (Lake Barcroft). Planning for a Stormwater Utility stalled after a Stormwater Utility Advisory Group submitted a draft implementation report in 1998. Seven localities in Virginia have enacted Stormwater Utilities, with average annual revenue generating capacities between \$2.6 million and \$10.4 million. Annual revenue figures may be compared to the FY 2003 Revised Budget Plan for the STW of \$7,913,691.

2.2 External Regulatory Data

State and federal regulations, mandates, and initiatives will continue to have a significant impact on STW programs. Table 2.3 provides an overview of external regulatory factors. Of these factors, major areas of concern to the STW include:

- Virginia Pollutant Discharge Elimination System (VPDES) permit;
- Chesapeake Bay Preservation Area Designation and Management Regulations;
- Total Maximum Daily Loads (TMDLs);
- Dam Safety Regulations;
- Chesapeake Bay Program/Virginia Tributary Strategy initiatives; and,
- Government Accounting Standards Board Statement 34.

Virginia Pollutant Discharge Elimination System

Under the State Water Control Law, Fairfax County was required to obtain a Virginia Pollutant Discharge Elimination System (VPDES) permit from the Department of Environmental Quality to discharge stormwater through its municipal separate storm sewer system (MS4). Originally, issued to the County on January 24, 1997 (State Water Control Law Permit No. VA0088587), and re-issued on January 24, 2002, the permit requires the County to develop a Stormwater Management Program. Program elements are listed in Table 2.4.

Table 2.3: External State and Federal Regulations Affecting the Stormwater Management Business Area (STW)

- VPDES/NPDES Permits
- Chesapeake Bay Preservation Area Designation and Management Regulations
- TMDLs
- Dam Safety Regulations
- Chesapeake Bay Program/Virginia Tributary Strategies
- Government Accounting Standards Board Statement 34
- FEMA/Floodplain Requirements
- Wetlands Regulations
- Erosion and Sediment Control
- Americans With Disabilities Act
- Archaeological/Historical Regulations

Table 2.4: VPDES MS4 Permit Components

Permit Section	Component	Permit Section	Component
B.1	Implement Watershed Management Plans to maintain water quality and manage environmental resources.	B.1.h.	Implement a program to control pollutants in stormwater discharges to the MS4 from landfills; other treatment, storage, or disposal facilities; facilities that are subject to EPCRA Title III, Section 313 and other facilities.
B.1.a	Inspect and maintain public stormwater facilities and inspect private stormwater facilities.	B.1.i.	Implement a program to reduce the discharge of pollutants from construction sites.
B.1.b.	Enforce all components of the County's Comprehensive Land Use Plan.	B.1.j.	Implement a program to maintain and update the accuracy of the MS4 storm sewer infrastructure.
B.1.c.	Operate and maintain public roadways in a manner to minimize pollutants, including deicing.	B.1.k.	Implement a public education program.
B.1.d.	Implementing retrofitting existing SWM facilities in areas without controls.	B.1.l.	Conduct dry weather screening, wet weather screening, and industrial and high risk runoff monitoring.
B.1.e.	Develop and implement controls to reduce the discharge of pollutants related to the storage and application of pesticides, herbicides, and fertilizers applied to public rights-of-way, parks, and other municipal property.	C.1.	Develop long term watershed monitoring plans and trend analysis to verify the effectiveness and adequacy of control measures in the SWM plan.
B.1.f.	Prohibit non-stormwater discharges (illegal discharge and improper dumping) to the MS4.	C.2.	Conduct bioassessment monitoring.
B.1.g.	Implement a program to prevent, contain, and respond to spills that may discharge into the MS4.	C.3.	Conduct floatables monitoring.

The STW has already re-organized to respond to the requirements of VPDES and it is not expected that additional VPDES requirements will directly affect County operations in the near future (the current permit will not expire until 2007). However, several entities regulated under VPDES Phase II (effective March 10, 2003) should coordinate with the STW. According to DEQ Northern Virginia Regional Office staff, the following additional entities are regulated under Phase II:

- the cities of Fairfax and Falls Church and the towns of Clifton, Herndon, and Vienna;
- the Fairfax County Public Schools;
- public hospitals; and,
- public colleges and universities (George Mason University and the Northern Virginia Community College system).

Some of these entities may request to piggy-back on the County's VPDES permit, or to coordinate specific aspects of permit planning and compliance. Such requests, depending on the nature of the coordination, could have budgetary implications.

Chesapeake Bay Preservation Area Designation and Management Regulations

In November, 2001, the Chesapeake Bay Local Assistance Board (CBLAB) adopted amendments to the Chesapeake Bay Preservation Area Designation and Management Regulations. A significant change was to mandate that all “water bodies with perennial flow” be protected by an RPA buffer area. The change in definition will significantly increase the number of streams protected by RPA buffer areas. A work group consisting of representatives from several Fairfax County agencies has evaluated the issues concerning the mapping of perennial streams and has recommended a protocol to accomplish their identification.

The deadline for compliance with the amended regulations has been extended by CBLAB until December 31, 2003.

Total Maximum Daily Loads

The Total Maximum Daily Load (TMDL) requirements of the Clean Water Act represent a relatively new regulatory effort that will affect the way the STW plans and operates. In its basic form, a TMDL is a pollution budget established for streams that violate State water standards.

- A total of 17 waterbodies that drain areas of Fairfax County are included in the 2002 Virginia 303(d) TMDL Priority List.
- TMDLs have already been developed for a segment of Accotink Creek and the non-tidal portion of Four Mile Run.
- The major cause of impairment for the majority of riverine waterbodies is either fecal coliform or general standards (benthic degradation).
- For most estuarine waterbodies, the cause of impairment is PCBs in fish tissue. Many of the listed waterbodies include significant drainage areas outside of Fairfax County.
- Twelve of the 17 waterbodies were listed for the first time in 2002.
- According to the Virginia DEQ’s current schedule, TMDL studies will be completed for six waterbodies by 2010, with the rest to be completed by 2014.

Specific issues of concern to the STW include the following.

- The Occoquan Reservoir is listed as impaired for dissolved oxygen (DO). Virginia DEQ has proposed that the impairment is naturally occurring and therefore does not require the development of a TMDL. However, this will require an intensive study to demonstrate that the impairment is non-anthropogenic.
- Water quality standards for bacteria have changed to a new *E. coli* standard. Virginia DEQ will phase out the fecal coliform standard after 12 data points (or measurements) or by June 30, 2008. It is not known how this will affect the number of streams listed as impaired in Fairfax County.
- The current VPDES permit can be used by Virginia to enforce compliance with TMDL implementation requirements. This could result in fines for non-compliance or an inability to renew the permit in the future.
- Once TMDLs are developed, the State must, by law, develop and implement a TMDL Implementation Plan. If it is found that the Implementation Plan cannot be met, then the State must conduct a Use Attainability Analysis to revise water quality standards or change the designated use for the water body.

Dam Safety Standards

In July 2002, the Virginia Dam Safety Act (Virginia Dam Safety Act, Article 2, Chapter 6, Title 10.1 (10.1-604 *et seq*) was amended to reflect legislative changes made during the 2002 General Assembly. The key change in the Act came in the language defining “impounding structure,” to which the following language was added to replace older language “...(i) all dams that are 25 feet or greater in height and that create an impoundment capacity of fifteen acre feet or greater, and (ii) all dams that are six feet or greater in height and that create an impoundment capacity of fifty acre-feet or greater.”⁵ Thus for structures that are six feet in height (the vertical distance from the streambed at the downstream toe to the top of the dam) or higher and create an impoundment capacity of 50 acre-feet or more, the structure becomes a regulated dam under the Act. While the six foot threshold was designed to remove small levees and dams that are used in the creation of artificial wetlands and small agricultural dams from these regulatory requirements, the definition’s amendment may require certain existing stormwater management facilities, which under the superceded definition of an impounding structure did not require a DCR dam safety permit, to now be classified as regulated dams under the Act and be required to apply for and obtain a dam safety permit from DCR. As such, inspection requirements and engineering certifications to the Virginia Soil and Water Conservation Board are required to be executed by the dam owner.

As many potentially designated structures may be private stormwater impoundments, commercial property administrators and homeowners associations (HOAs) may soon need to consider the need to have their dams inspected and certified on an annual basis.

Chesapeake Bay Program/Virginia Tributary Strategies

The federal Chesapeake Bay Program and Virginia’s Tributary Strategies process will present significant new challenges to the STW. The multi-jurisdictional 2000 Chesapeake Bay Agreement commits Virginia to remove the Chesapeake Bay from the U.S. EPA’s list of impaired waters by the year 2010. Such an effort will require significant additional reductions in both nutrient and sediment loads to the Chesapeake Bay. While the 2000 Chesapeake Bay Agreement is non-regulatory, failure to meet its water quality commitments could result in the imposition of a TMDL, which is regulatory in nature, on the entire Chesapeake Bay watershed.

According to information from the Metropolitan Washington Council of Governments, nutrient and sediment load caps will be defined for each of the Bay’s nine major tributaries, including the Potomac, in April 2003. These will serve as the quantitative basis for a new Potomac Tributary Strategy, expected to be developed by April 2004. While the State has ultimate responsibility for developing the Tributary Strategy, most of the implementation measures will fall to local governments.

Government Accounting Standards Board – Statement 34

Government Accounting Standards Board (GASB) Statement 34 requires the County to report capital assets at historical cost or estimated historical cost. Capital assets include infrastructure, which are defined as long-lived capital assets that are stationary in nature. Examples include stormwater management facilities, public drainage systems, public trails and walkways, commercial revitalization programs, etc. To meet GASB requirements, the County engaged a contractor to develop a General Infrastructure, Library Collections, and Related Assets Report (June 2002). The purpose of the report was to “provide recommendations to assist the County in: (1) estimating the net book value of general infrastructure assets, library collections, and all other

⁵ Virginia Soil and Water Conservation Board Impoundment Structure Regulation.

related assets at June 30, 2002; and (2) prospectively recording, depreciating, and tracking these assets subsequent to June 30, 2001.”

FEMA/Floodplain Requirements

Fairfax County participates in the National Flood Insurance Program (NFIP). The NFIP is a federal program enabling property owners in participating communities to purchase insurance as a protection against flood losses in exchange for State and community floodplain management regulations that reduce future flood damages. Fairfax County has a total of 1,269 flood insurance policies in place that provide approximately \$268 million in flood insurance coverage with a total annual premium value of \$537,169.⁶

Fairfax County’s floodplain management regulations are promulgated through the County Zoning Ordinance and are implemented through the County’s Public Facilities Manual (PFM). The County’s program meets all the minimum requirements set forth in the Federal Code (44 CFR 60) and goes beyond the federal minimums in several areas, including the requirement to elevate the lowest part of the lowest floor of any proposed residential structure at least 18 inches above the 100-year water surface elevation and provide a minimum horizontal distance of 15 feet between the 100-year water surface and the structure proper.⁷

Because the County’s floodplain management program requirements exceed the federal minimum standards, the County is eligible for, and participates in, the NFIP Community Rating System (CRS), which rewards community flood insurance policy holders with premium discounts based on the community’s implementation of additional floodplain management activities. Community flood insurance policy holders can receive anywhere from a 5% to 45 % reduction in their policy premiums. The CRS scale runs from category 10, which receives no premium discount, to category 1, which receives a 45% premium discount. Over 75% of the communities that participate in CRS are either a category 8 (10% discount) or category 9 (5% discount). Fairfax County’s current CRS rating is 9.⁸

Wetlands Regulations

The Virginia Department of Environmental Quality is the primary State agency responsible for nontidal wetland regulation, while the Virginia Marine Resources Commission (VMRC) is the State agency responsible for issuing tidal wetland permits. The Virginia Water Protection Permit Program serves as Virginia’s certification process for both tidal and nontidal wetland impacts permitted under Section 404 of the Clean Water Act. In 2000, the General Assembly removed the dependence of the State nontidal wetlands program on the issuance of a federal permit, thus enabling Virginia DEQ to use the Virginia Water Protection Permit Program to regulate activities in wetlands. General Assembly action came largely in response to a Supreme Court ruling that threw into doubt the federal government’s ability to prohibit “Tulloch ditching.” Tulloch ditching involves creating a series of ditches to drain a wetland without actually filling the wetland. New State regulations prohibit this type of excavation.

⁶ Statistics as of 12/31/02 from the National Flood Insurance Program (NFIP).

⁷ 2001 Fairfax County Public Facilities Manual, § 6-0704.2, page 6-19.

⁸ CRS data as of October 1, 2002.

Erosion and Sediment Control

The Fairfax County Erosion and Sediment Control Ordinance (Chapter 104 of the County Code) requires actions to reduce sediment deposition from construction sites and requires adequate outfalls for stormwater discharges to protect downstream properties and waters from upstream impacts. The Virginia Department of Conservation and Recreation (DCR) implements the State ESC Program according to the Virginia Erosion and Sediment Control Regulations (4VAC30-50). The regulations specify "Minimum Standards," which include criteria, techniques and policies, that must be followed on all regulated activities.

Fairfax County has a Corrective Action Agreement with DCR for program elements found to be inconsistent with the State regulations during the local program review process. The last review of the County's program by DCR was completed in November 2002.

Americans With Disabilities Act

Title II of the federal Americans With Disabilities Act (ADA), enacted in 1990, requires State and local governments to make their programs and services accessible to persons with disabilities. For existing buildings and facilities, the ADA requires that all barriers to accessibility be removed when it is "readily achievable" to do so.⁹ An example of an ADA requirement affecting Fairfax County is when streets and roads are newly built or altered they must have ramps wherever there are curbs or other barriers to entry from a pedestrian walkway. Another example can be seen in how ramps are incorporated in to the design of Virginia Railway Express stations.

Archaeological/Historical Regulations

The National Historic Preservation Act (NHPA) establishes a comprehensive program to preserve sensitive historic structures and archaeological sites. Of particular relevance to the STW is Section 106 of the NHPA, which requires consideration of historic preservation during any activity that requires federal action or involves federal funding. This includes Army Corps of Engineers permits for actions that have the potential to impact Waters of the United States. Coordination at the State level is handled by the Virginia Department of Historic Resources.

While the federal agency involved and the Virginia Department of Historic Resources are responsible for coordinating the Section 106 review, the County must work with those agencies to ensure that proper documentation has been provided. If it is found that an activity has the potential to affect historic and/or archaeological resources, then the County may be required to mitigate the impacts, or to consider alternatives to the project.

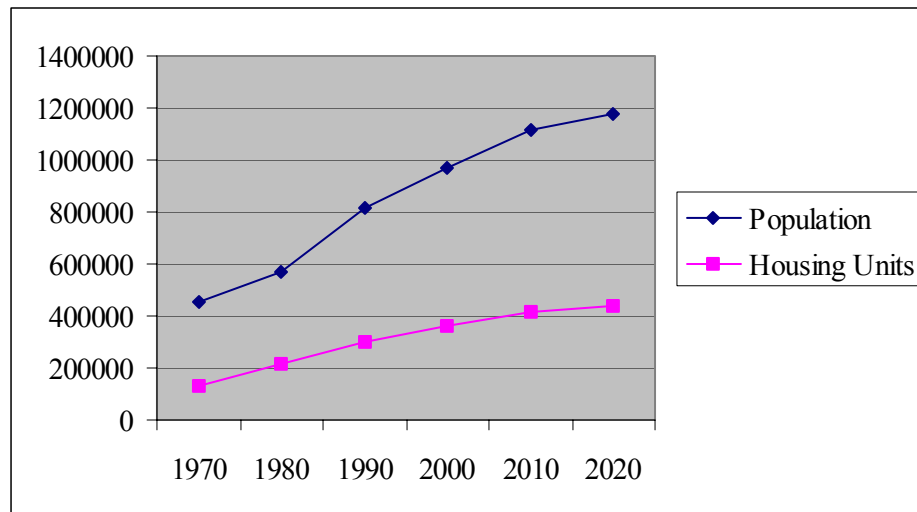
⁹ ADA and City Governments, U.S. Department of Justice, May 2000.

2.3 Demographic Data

The demographic profile of Fairfax County has changed dramatically in the past several decades, both in terms of growth and population characteristics. While Fairfax County's rate of growth is predicted to diminish over the next 10 to 20 years, the actual increase in residents is still considerable. Fairfax County grew by 18% between 1990 to 2000 from 818,600 residents to 968,200 residents. According to Metropolitan Washington Council of Governments (MWCOC) Round 6.2 forecasts, Fairfax County is expected to grow by an additional 144,700 residents between 2000 and 2010. This represents a slightly decreased rate of increase (15%); however, in terms of sheer numbers, it is still a larger actual increase than either Loudoun County or Prince William County (see Figure 2.3 and Table 2.5).

Much of the County's future growth in population will not come in the form of the development of virgin land, but will come as a result of redevelopment and densification of existing land use patterns (see Figure 2.4). As of January 2000, only 11.5% of the County's land area was considered vacant land. By contrast, almost 36% of the County's land was considered vacant in 1975. At the same time, impervious surface cover in the County is expected to continue to increase. A GIS analysis performed by the Stormwater Planning Division staff estimates that impervious surface cover will increase from a current 15.7% to 17.9% under hypothetical build-out conditions based on the existing Comprehensive Plan.¹⁰

Figure 2.3: Population and Housing Unit Trends in Fairfax County



¹⁰ The Role of Regional Ponds in Fairfax County's Watershed Management, March 2003.

Table 2.5: Comparative Growth Rates for the Washington Metropolitan Region¹¹

JURISDICTION	(Thousands)						
	1990	2000	2005	2010	2015	2020	2025
District of Columbia	606.9	518.1	523.5	554.7	588.0	618.6	648.4
Arlington County	170.9	192.0	198.2	201.4	207.2	212.9	218.1
City of Alexandria	111.2	127.1	131.3	135.3	138.7	140.9	146.1
Central Jurisdictions	889.0	837.2	853.0	891.4	933.9	972.4	1,012.6
Montgomery County (1)	757.0	855.0	910.0	945.0	975.0	1,000.0	1,020.0
Rockville (2)	44.8	51.8	55.8	59.1	59.8	60.0	60.0
Prince George's County	729.3	784.6	824.5	852.4	886.1	916.6	940.9
Fairfax County (3)	818.6	968.2	1,045.4	1,112.9	1,155.6	1,184.1	1,203.7
City of Fairfax	19.6	21.7	22.1	22.7	22.8	22.8	22.8
City of Falls Church	9.6	10.4	10.6	10.7	10.8	10.9	10.9
Inner Suburbs	2,334.1	2,639.9	2,812.7	2,943.7	3,050.4	3,134.4	3,198.3
Loudoun County	86.1	172.2	238.2	304.2	371.2	439.0	508.2
Prince William County	215.7	286.1	321.9	350.5	369.2	387.1	405.7
Manassas/Manassas Park	34.7	43.2	44.7	45.4	45.7	46.0	46.4
Calvert County (4)	51.4	75.0	80.8	87.0	91.4	96.0	100.5
Charles County (4)	101.2	123.2	136.7	150.1	166.5	182.9	195.9
Frederick County	150.2	194.9	216.6	238.3	260.0	281.7	303.4
Stafford County (5)	61.2	78.6	87.3	96.0	104.7	113.3	122.0
Anne Arundel County (6)	427.2	480.2	501.0	511.2	522.4	531.5	537.0
Howard County (6)	187.3	253.5	283.8	302.5	309.4	303.5	303.5
Outer Suburbs (6)	700.5	973.1	1,126.1	1,271.5	1,408.7	1,546.0	1,682.1
Northern Virginia	1,527.6	1,899.5	2,099.7	2,279.1	2,425.9	2,557.0	2,683.9
Suburban Maryland (6)	1,789.0	2,032.7	2,168.5	2,272.8	2,379.0	2,477.2	2,560.7
REGIONAL TOTAL (6)	3,923.6	4,450.3	4,791.7	5,106.6	5,392.9	5,652.8	5,893.0

(3) Includes Fairfax County group quarters population in the Massey Complex.

According to 2000 U.S. Census data, Fairfax County's citizenry is also becoming racially and ethnically diverse.

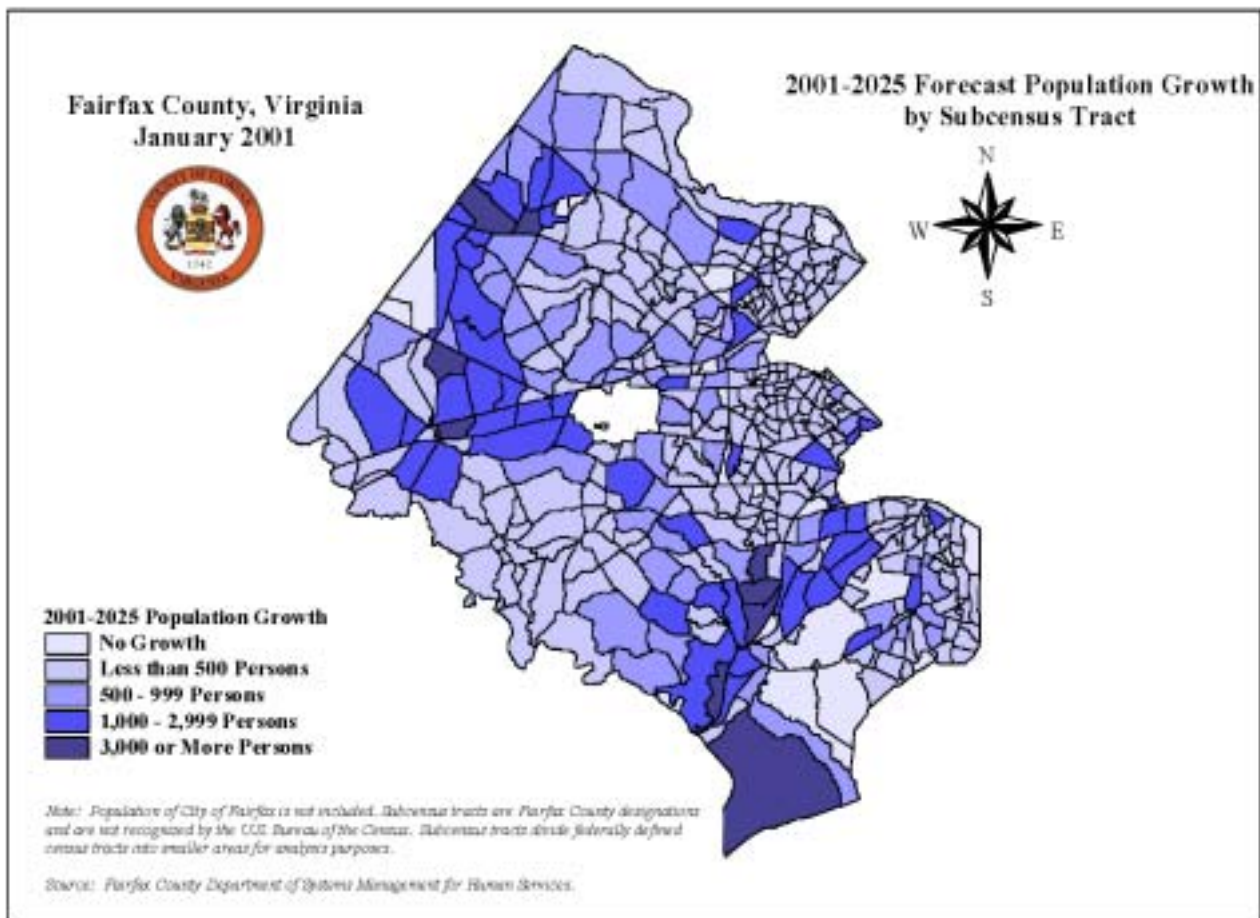
- In 1980, 86.2% of the County's population consisted of White/Non-Hispanics.
- In 2000, White/Non-Hispanics comprised only 63.6% of the population.
- While the Black population rose slightly, major increases were seen in the Hispanic (3.3% to 11.6%) and Asian (3.8% to 14%) populations.
- A major outgrowth of this trend that affects almost all Fairfax County business areas is an increase in the percentage of the population that "speaks English less than very well."
- Over 13% of County residents speak English less than very well.
- A little less than half of those speaking English less than very well speak Spanish as a primary language.
- Asian and Pacific speaking residents comprise about one-third of those speaking English less than very well.

¹¹ Metropolitan Washington Council of Governments Round 6.2 Forecast.

- Fairfax County, by far, has the largest concentration of residents that speak English less than very well in Virginia (119,065 residents over 5 years of age, compared to Arlington County, with only 29,793 residents over 5 years of age).
- A significant ramification of this trend is that at least 13% of County residents will not understand outreach and educational materials produced in English-only.

Finally, Fairfax County has an aging population that could affect the business area by generating additional demand for sidewalks and trails. According to information from the Fairfax County Department of Human Services and the U.S. Census Bureau, the elderly population (65+) in the County is expected to increase from 8.2% of the total population in 2001 to 12.9% in 2010.

Figure 2.4: Expected Growth Areas in Fairfax County by Subcensus Tract



2.4 Infrastructure Data

An increasing infrastructure base over time erodes available staff resources to adequately deal with necessary upkeep and maintenance. Since 1980, the County has added over 400,000 residents, 45 million square feet of office space, and over 165,000 housing units. During this process, STW became responsible for additional stormwater management facilities, walkways, roadways, commercial revitalization and park and ride facilities, public street name signs, and other related infrastructure inventory.

In June 2002, Fairfax County performed a valuation of general infrastructure assets to meet GASB Statement 34 requirements. Table 2.6 provides an overview of business area infrastructure as of December 31, 2002, including stormwater management ponds, public trails and walkways, public drainage systems, and MSMD funded contract facilities. In addition to these publicly-owned facilities, there is estimated to be over 1,900 privately maintained facilities for which the County has some oversight responsibility, primarily in the form of inspections to ensure that maintenance is being carried out.

Table 2.6: STW Maintained County Infrastructure (December 31, 2002)

Stormwater Management	Facilities
• State Ponds	6 facilities
• Regional Ponds	35 facilities
• Small Ponds	969 facilities
Public Trails and Walkways	Miles
• Trails (asphalt)	197.0 miles
• Public Street Sidewalk (concrete)	310.9 miles
• School Walkway (concrete)	47.6 miles
MSMD Funded Contract	Facilities
• Bus Shelters	23 facilities
• Park and Rides	6 facilities
• Commuter Rails	4 facilities
• Bus Transits	1 facilities
Public Drainage System	Miles/Structures
• Pipes	743.0 miles
• Structures	37,116 structures
• Improved Channels	75.2 miles
• Swales, Ditches, Streams	4.6 miles

Since the County's stormwater management program began in the late 1970s and rapidly accelerated in the mid-1980s, the STW is faced with how to maintain and/or replace aging structures. The life-span of a small pond, for instance, can range from 20 to 50 years depending on the facility and the level of preventative maintenance performed. Slightly more than 300 of the County's 969 small ponds were build prior to 1985 and are therefore approaching the 20 year mark.

2.5 Environmental Data

The health of the County's natural resources is a major external factor that will affect the STW in terms of planning and budgeting in the future. The County has over 900 miles of stream and 30 separate subwatersheds.

Environmental data in the County is gathered through the Department of Health's Division of Environmental Health, the DPWES Stream Protection Strategy Program, and the Northern Virginia Soil and Water Conservation District's Volunteer Stream Monitoring Program. The Health Department has conducted a stream water quality program since 1969. Currently, 85 sites within 25 of the County's 30 watersheds are sampled twice a month. In its most recent

assessment, the Department of Health has concluded that the overall health of the County's streams is:

- Good for chemical and physical parameters; and,
- Fair for fecal coliform bacteria.

Table 2.7: Department of Health Water Quality Summary¹²

Parameter	Conclusion
Dissolved Oxygen	99% of samples above the minimum 4.0 mg/l range.
Nitrite Nitrogen	Overall geometric mean of 0.6 mg/l. No samples above the maximum level of 10 mg/l.
Total Phosphorus	Overall geometric mean of 0.10 mg/l does not indicate significant increase over prior year average.
Temperature	Average low of 32 F and average high of 84 F. Maximum standard for free-flowing stream is 89.9 F.
Heavy Metals and Toxins	All results within required limits.
pH	Ranged from 5.2 to 9.3. Range of 6.0 to 9.0 is considered adequate protection. Fifteen samples above 9.0, and six samples below 6.0.
Fecal Coliform	Average geometric mean for fecal coliform at several sites approaches or surpasses 1,000 f.c./100 ml limit.

While the Health Department's program focuses on water quality testing, the County launched a Stream Protection Strategy (SPS) program in 1998 to assess the physical stability and ecological integrity of major streams and tributaries within the 30 watersheds in the County. The results from the original baseline assessment completed in 2000 were used to identify, rank, and prioritize County streams. The SPS Baseline Study was published in January 2001 and is available on the County's website.

Figures 2.5 shows the percentage of SPS monitoring sites that ranked very poor, poor, fair, good, or excellent according to an Index of Biological Integrity (IBI). Figure 2.6 shows the correlation between impervious surface cover and stream degradation. As impervious surface cover increases, ecological activity tends to decrease rapidly. Generally, impervious surface cover from 10 to 20% has the potential to significantly impact stream biology, while cover greater than 20% tends to result in a severely degraded ecology. Figure 2.7 shows that fully 53% of the County has impervious surface cover greater than 20%.

¹² Taken from 2002 Annual Report on the Environment, EQAC.

Figure 2.5: Percentage of SPS Monitoring Sites Scoring in Each of the Five IBI (Index of Biological Integrity) Quality Categories

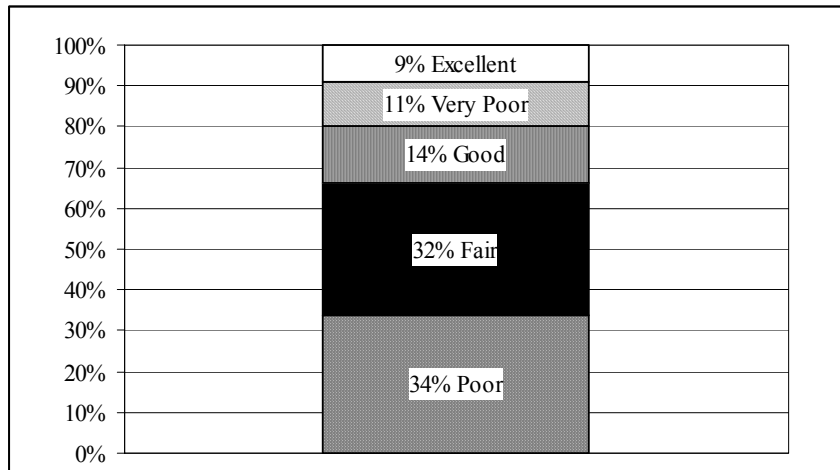


Figure 2.6: Percent Imperviousness Versus IBI in Fairfax County

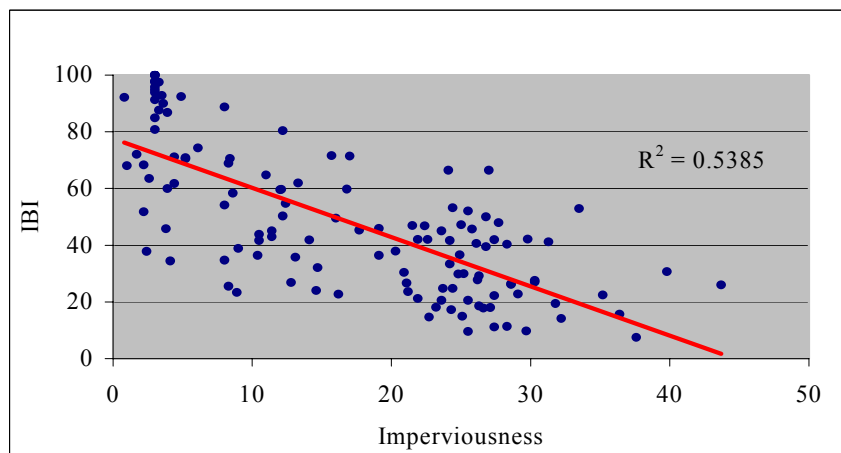
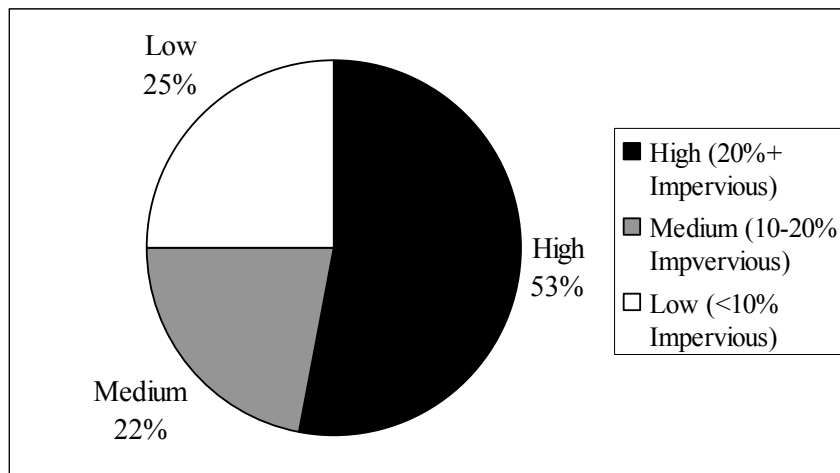


Figure 2.7: Percentage Impervious Surface Cover in Fairfax County



2.6 Public Perception and Citizen Expectations

Public perception about stormwater and whether it is a problem or not figures prominently in the ability of the STW to secure additional resources. One external strength noted during the SWOT process is that Fairfax residents, in general, have a healthy awareness of environmental issues. While there is no Fairfax County-specific data on public perceptions about stormwater, the U.S. EPA's Chesapeake Bay Program has conducted an assessment of knowledge, attitudes, and behaviors towards water quality issues.¹³ Key findings pertaining to the STW include the following.

- 48% of respondents correctly identified the definition of “watershed.” The ability to define a watershed increases with income. White respondents scored higher (65% correct) than Black respondents (36% correct).
- The highest overall knowledge scores were obtained in North-central Virginia (54% correct).
- 89% of respondents are either Very or Somewhat Concerned about pollution in the Chesapeake Bay.
- 42% of respondents believe that their local streams and waterways are More Polluted than 10 years ago. 20% believe that they are Less Polluted.
- Personal observation was the most important factor affecting respondents' views on pollution (31%). Other factors included Environmental Group Reports (21%) and Media Reports (20%).
- Residents in North-central Virginia indicated that Population Growth is the greatest source of pollution.
- 53% of respondents agreed that their everyday actions adversely affect water quality.

¹³ Chesapeake Bay Watershed Resident Survey, Conservation Management Institute, prepared for the Chesapeake Bay Program, August 21, 2002.

- 94% of respondents believe that restoring waterways in the Bay region is Important compared to other social, economic, and environmental problems.
- 49% of respondents believe that current restoration efforts are Too Little. 2% believe that they are Too Much.
- Catalysts for action include: saving money in the long run (37%); being directly affected by pollution (57%); ability to really make a difference (43%); and minimal time commitment (37%).

Closely related to public perception is citizen expectation. As opposed to public perception, information regarding expectations is largely anecdotal. In general, citizens expect the stormwater management infrastructure to work and that the County will take care of problems before they cause inconvenience or damage to private property. As with most public infrastructure (including waste management and water pollution control facilities), there is an expectation of “out-of-sight, out-of-mind,” making it difficult to plan for large capital improvements such as regional ponds. Finally, based on Board of Supervisors actions to-date regarding alternative funding strategies, citizens expect the stormwater infrastructure to be paid for out of the General Fund.

2.7 Unplanned External Factors

Unplanned, or short-term external factors were cited as both opportunity and a threat during the SWOT process. These factors are a threat in that they can siphon funding and resources from important ongoing programs and divert attention from long-range planning. This is especially true if the factor is outside of the STW business line. These factors are an opportunity in that they can sometimes be used to provide momentum to solve related problems or to increase overall funding for programs. Examples include:

- West Nile Virus impact on STW by focusing attention on the need for maintenance and souring public opinion on BMPs that utilize standing water.
- Public health issues, such as whether the County has a responsibility to alert citizens about stream segments that are impaired for fecal coliform bacteria, etc.
- Accidents or injuries involving STW-related infrastructure, such as stormwater ponds, trails, walkways, etc.
- Major weather-related events, such as this past winter’s snow storm, last summer’s drought, and major flooding events.

3 Internal Environment

A scan of the internal environment consists of an analysis of organizational strengths and weaknesses, an accounting of current programs, and overview of funding and resource allocation trends. Strengths and weaknesses are found in Table 1.1 at the beginning of this report. Internal issues critical to the future of the STW include the kind of program the County wants to have in the next 10 to 20 years and what type of organizational model the County wants to adopt (e.g., loose confederation of collaborators, or a strong centralized program). Currently, the internal mission of the STW is:

“To develop and maintain a comprehensive watershed and infrastructure management program to protect property, health, and safety, to enhance the quality of life, and to preserve and improve the environment for the benefit of the public. To plan, design, construct, operate, maintain, and inspect the infrastructure, and perform environmental assessments through coordinated stormwater and maintenance programs in compliance with all government regulations utilizing innovative techniques, customer feedback, and program review. To be responsive and sensitive to the needs of the residents, customers, and public partners.”

3.1 County Goals

Long-range County goals affecting the STW are found in the *2002 Edition of the Policy Plan Element of the Fairfax County Comprehensive Plan* and the *Stream Protection Strategy Baseline Study*. Short and mid-range goals are found in the FY 2004 advertised budget. In addition, the *Fairfax County Park Authority Policy Plan* contains policies that affect the STW in general and regional ponds more specifically.

Comprehensive Plan

Goals and policies relating to the STW from the Comprehensive Plan are found in the Environment, Transportation, and Revitalization elements. Major objectives relating to the STW are outlined below. A full listing of objectives and policies is found in Appendix D.

- Environment, Objective 2 “Prevent and reduce pollution of surface and groundwater resources. Protect and restore the ecological integrity of streams in Fairfax County.”
- Transportation, Objective 1 “Fairfax County should provide for both through and local movement of people and goods through a multi-modal transportation system that places the maximum practical emphasis on alternatives to the single-occupant vehicle.”
- Transportation, Objective 2. “Fairfax County should seek to increase the number of commuters using non-motorized transportation and public transportation (i.e., rail, bus, carpooling, and vanpooling) so that by the year 2000, 60% of County commuters to the metropolitan core, 20% of the commuters to the Tysons Corner Urban Center, 15% of the commuters to Suburban Center and Transit Station Areas and 5% of other County commuting work trips will use public transportation, and 3% of all trips will be made by non-motorized (pedestrian and bicycle) transportation.”
- Transportation, Objective 4. “A comprehensive network of trails and sidewalks should be provided as an integral element of the overall transportation network.”
- Transportation, Objective 8. “Public safety should be ensured both for users of transportation facilities and services and for the general public.”
- Revitalization, Objective 2. “Fairfax County should address long term infrastructure financing needs in designated Revitalization Areas recognizing that additional tax revenues are generated by revitalization projects.”

Stream Protection Strategy

As part of the Stream Protection Strategy program development, the Stormwater Planning Division developed a set of long-range goals. An important aspect of these goals is that they were stakeholder developed. These goals include the following:

- Provide comprehensive baseline information on stream conditions through an assessment of biological, chemical, physical, and habitat parameters within the County's watersheds.
- Provide a basis for continual/long term monitoring and assessment of water quality in County streams.
- Evaluate the progress and effectiveness of implemented measures.
- Develop strategies for stream restoration and protection.
- Promote inter-jurisdictional cooperation to restore and maintain the quality of shared watersheds.
- Recommend changes to County ordinances as necessary to achieve and enhance water quality goals.
- Conform to past, present, and future goals of the County.

FY 2004 Advertised Budget Performance Measures

The FY 2004 advertised budget contains a number of specific short and mid-term performance measures. These include:

- To inspect at least 20% of the County's storm drainage system and 100% of the stormwater management facilities.
- To inspect and maintain at least 40% of the County's walkways and trails.
- To inspect 100% of all STW maintained Commuter Rail and Park-and-Ride facilities monthly.
- To increase the completion of improvement designs on schedule and within budget by 10 percentage points, from 50 to 60%.
- To inspect and sample at least 200 stormwater outfalls.
- To review and process at least 75% of waiver requests and rezoning applications within established deadlines.

FCPA Policy Plan

Although there are other County agencies that have policies and objectives affecting STW objectives, Fairfax County Park Authority goals and objectives are particularly relevant given that many of the County's trails and stormwater management facilities are located, or planned to be located, in stream valley corridors. An existing conflict between STW and FCPA goals is found in FCPA Policy #304, which discourages the siting of regional stormwater ponds on parklands. Most planned regional ponds are located along the main stems of streams. The FCPA owns and operates many of the County's streams and their adjacent parks. In this case, the FCPA's concern with potential adverse impacts of cultural and ecological resources conflicts with STW concerns with protecting downstream areas from flooding and water quality degradation.¹⁴

¹⁴ The Role of Regional Ponds in Fairfax County's Watershed Management, March 3, 2003.

3.2 Implementation Mechanisms

Major regulatory tools that can be used to implement objectives and policies include the County Code (including the Zoning Ordinance, Erosion and Sediment Control Ordinance, and the Chesapeake Bay Preservation Ordinance) and the Public Facilities Manual. In some respects, these tools are external factors in that they are adopted by bodies outside of the STW. However, they are internal factors in that they have an immediate affect on the way that the STW performs business. In addition, the STW has considerable control over what, if any, changes are made to these implementation mechanisms.

The Public Facilities Manual is a particularly important implementation mechanisms and is cited both positively and negatively by external and internal stakeholders. The PFM sets forth the guidelines for the design of all public facilities constructed to serve new development. This includes stormwater management infrastructure, sidewalks, and trails. An Engineering Standards Review Committee (ESRC) is responsible for studying and reviewing technical components of the PFM and making recommendations for revisions to the Board of Supervisors. The ESRC consists of representatives from the citizenry at-large, the engineering and development community, civic associations, environmental organizations, VDOT, etc.

3.3 Organization

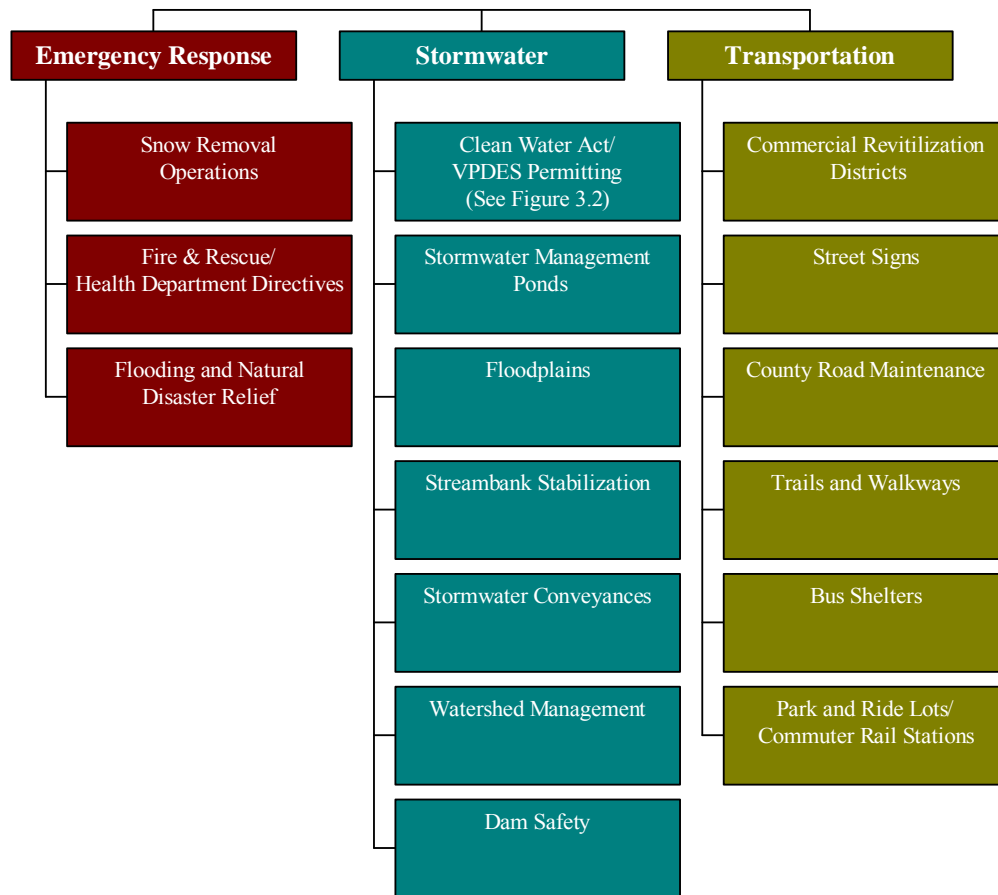
The STW consists of the Maintenance and Stormwater Management Division and the Stormwater Planning Division. The STW was established in conjunction with a DPWES reorganization in FY 2000 in order to place new emphasis on environmental stewardship within the stormwater management areas. This reorganization consolidated key functions such as development and implementation of master plan efforts, inventory identification and assessment, stormwater regulation, capital construction, and performance of critical maintenance activities.¹⁵

The Maintenance and Stormwater Management Division provides for in-house and contracted maintenance services for the County's vast inventory of stormwater facilities, walkways, roadways, commercial revitalization, park and ride commuter rail facilities, public street name signs, and other related infrastructure. Additionally, this MSMD provides snow removal and other emergency support services for designated facilities and agencies County-wide.

The Stormwater Planning Division (SWPD) provides stormwater planning, monitoring, and capital project design services. The SWPD maintains the County's federally mandated stormwater discharge permit, National Pollutant Discharge Elimination (NPDES) permit. The SWPD also coordinates State mandated dam operation and maintenance certificates, watershed management efforts, floodplain and FEMA Community Rating System efforts, public education and awareness initiatives, stream monitoring and assessments, and implementation of the County's master drainage plan. Engineering design and contract administration services for storm drainage improvement projects are also provided. From a functional standpoint, the STW can be divided into three areas as shown in Figure 3.1.

¹⁵ From FY 2004 Preliminary Budget.

Figure 3.1: STW Functional Areas



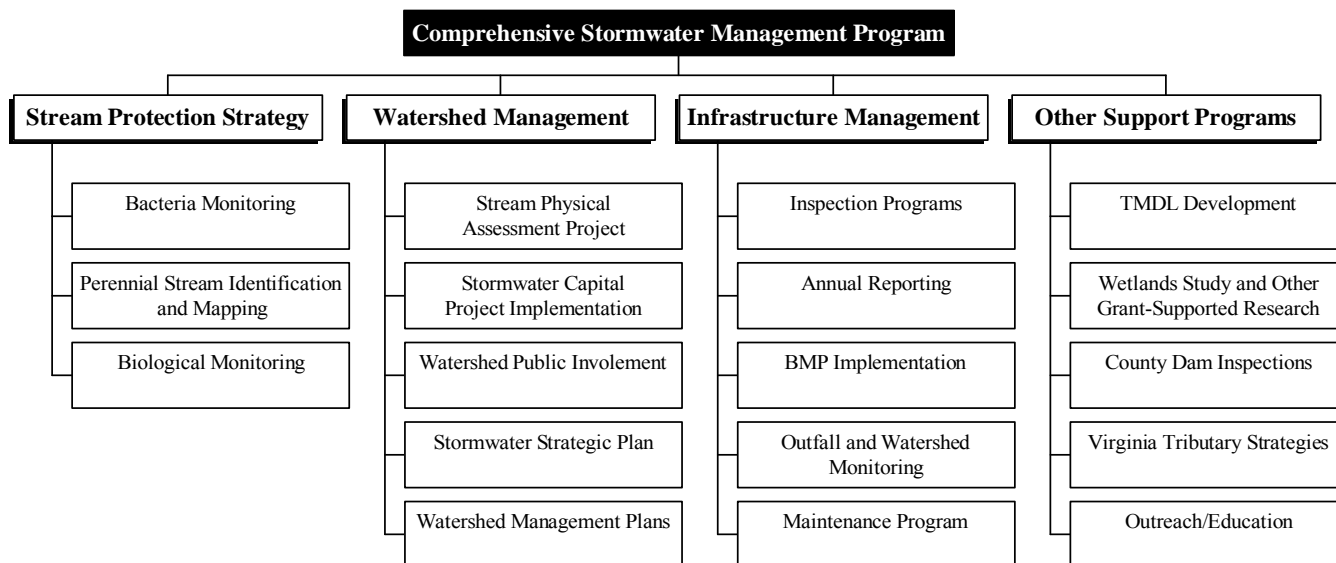
3.4 Programs

The STW has a great variety of programs that support its mission. Most of these programs are organized around various federal and State mandates. This is especially true with respect to the County's VPDES permit (see Figure 3.2). During the SWOT process, staff noted particular pride in its emergency response system and its ability to address a great variety of tasks and programs. Key STW accomplishments as summarized in the FY 2004 advertised budget include the following.

- Initiated Watershed Management Planning efforts for the entire County.
- Successfully negotiated with the Virginia DEQ the renewal of the NPDES permit for the next 5 years.
- Developed County web pages on watersheds to support the need to provide continual information and public outreach relating to Watershed Management Planning.
- Initiated a special task force to evaluate the current Regional Stormwater Management Pond program and to make recommendations for possible changes.
- Developed a protocol for identifying perennial streams and conducted a pilot project to test the protocols. Commenced a 3-year project to field identify additional perennial streams countywide.

- Provided support to the State in completion of Total Maximum Daily Loads (TMDLs) for Accotink Creek and Four Mile Run impaired stream segments.
- Continued annual biological assessment to determine trends in stream water quality for 20 percent to 25 percent of the County under the Stream Protection Strategy (SPS) program.
- Designed and provided contract assistance/oversight for the maintenance rehabilitation of 43 sidewalks, trails, roadways, storm drainage and stormwater management facilities.
- Designed and constructed shallow wetlands marshes in 12 community stormwater management facilities to improve water quality and provide enhanced wildlife habitat.
- Initiated a new process to implement smaller house flooding repair projects arising from backups of the County's storm drain network.

Figure 3.2: Fairfax County Comprehensive Stormwater Management Program to Meet VPDES Permit Requirements



3.5 Revenue Sources

The primary source of revenue for the STW is the County's General Fund, which covers staff resources, small pay-as-you-go capital improvements, and most maintenance activities. The County's Capital Improvement Fund and General Obligation Bonds provide revenue for larger capital improvements. The County's Pro-Rata Share Program is also a source of revenue but does not come close to covering basic programmatic costs. In addition, the Pro-Rata Share Program started relatively late during the urbanization of the County and is now diminishing each year as the build-out approaches. The County estimates total additional revenue from the program through build-out to be between \$41 and \$47 million.

In addition to revenue collected by the County, many homeowners associations (HOAs) and other organizations perform their own stormwater facility maintenance through the assessment of fees. Table 3.1 provides an overview of primary and secondary funding mechanisms actually used by the County.

Table 3.1: Stormwater Management Funding Sources Used by Fairfax County

Primary Funding Methods	Secondary Funding Methods
<ul style="list-style-type: none">• General Fund• General Obligation and Revenue Bonding• Pro-Rata Share Program	<ul style="list-style-type: none">• Special Assessments• Watershed Improvement Districts• Federal and State Funding/Grants

3.6 Resource Allocation - Funding

Fairfax County's advertised FY 2004 budget contains General Fund Revenue of \$2.59 billion, which reflects an increase of 6.03% from the FY 2003 Revised Budget Plan. Advertised budget facts include:

- Real-Estate Tax Rate reduced from \$1.21 to \$1.19 per assessed value.
- School Board Transfer of \$1.24 billion represents approximately 48% of the total budget.
- General Property Taxes comprise 77.6% of the General Fund Receipts.
- Assessed Value for General Property Taxes rose 12.48% on average.
- Sewer Service Rate remains constant at \$3.03 per 1,000 gallons of water consumption.
- Authorized Positions decreased by 49 positions compared to FY 2003.

The Department of Public Works and Environmental Services proposed FY 2004 expenditures total \$52,923,070, or slightly less than 6% of all General Fund Direct Expenditures. The STW comprises approximately 15% of the DPWES budget at \$7,934,339, or approximately 0.8% of all General Fund Direct Expenditures. Table 3.2 provides a cost summary of the STW from FY 2002 through proposed FY 2004.

While there is a published budget for the current year, DPWES must revise its budget and faces difficulty with longer-term planning efforts because the funding may not be available in the future. Competition among County programs is high, and the STW programs are not among the most visible, especially in relationship to transportation, public safety, and education. Finally, unplanned high profile initiatives (West Nile Virus, emergency preparedness, etc.) create high emotional stress among the population and the staff who have to incorporate those efforts into an already strained budget.

Table 3.2: STW Agency Cost Summary¹⁶

Agency Summary				
Category	FY 2002 Actual	FY 2003 Adopted	FY 2003 Revised	FY 2004 Advertised
Authorized Positions/Staff Years Regular	125/125	123/123	123/123	120/120
Expenditures				
Personnel Services	\$ 5,199,745	\$ 6,007,822	\$ 6,007,822	\$ 6,185,362
Operating Expenses	\$ 2,466,965	\$ 2,749,669	\$ 2,980,131	\$ 2,442,407
Capital Equipment	\$ 479,306	\$ 241,397	\$ 358,988	\$ 51,000
Subtotal	\$ 8,146,016	\$ 8,998,888	\$ 9,346,941	\$ 8,678,769
Less:				
Recovered Costs	\$ (722,323)	\$ (708,595)	\$ (708,595)	\$ (744,430)
Total Expenditures	\$ 7,423,693	\$ 8,290,293	\$ 8,638,346	\$ 7,934,339
Income:				
Street Sign Fabrication Fees	\$ 6,055	\$ 5,170	\$ 5,170	\$ 4,648
Miscellaneous Income	\$ 22,561	\$ 14,027	\$ 16,000	\$ 16,000
Total Income	\$ 28,616	\$ 19,197	\$ 21,170	\$ 20,648
Net Cost to the County	\$ 7,395,077	\$ 8,271,096	\$ 8,617,176	\$ 7,913,691
Cost Center Summary				
Category	FY 2002 Actual	FY 2003 Adopted	FY 2003 Revised	FY 2004 Advertised
Maintenance and Stormwater Management				
Division	\$ 6,592,503	\$ 7,214,135	\$ 7,617,420	\$ 6,800,890
Stormwater Planning Division	\$ 831,190	\$ 1,076,158	\$ 1,020,926	\$ 1,133,449
Total Expenditures	\$ 7,423,693	\$ 8,290,293	\$ 8,638,346	\$ 7,934,339

3.7 Resource Allocation - Staffing

The STW does its work through a combination of regular positions filled by full-time employees and a number of Limited Term Exempt (LTE) employees who receive no benefits and work 11 months at a time. Of the 11 employees of the Stormwater Management Branch of SWPD, four are LTEs. In addition, two STW inspectors from MSMD are LTE employees. The number of LTEs create structural problems in scheduling, loss of historic information, and morale problems as the employee base changes with employees going in and out of the system.

Although the STW has taken on a number of new State and federal mandates and is maintaining a growing infrastructure to support population increases, general staffing has decreased in recent years (Table 3.2). An example of how the STW is taking on increasing responsibilities using existing resources is the current plan to combine the stream monitoring activities of the Health Department with those of the SWPD by July 2003. As a result, the SWPD will take complete responsibility for a comprehensive water quality monitoring program.

¹⁶ Advertised Fairfax County FY 2004 Budget.

3.8 Public Outreach

With a citizenry highly interested in environmental affairs, the STW has tried to develop a public outreach program, but the efforts do not create a lasting impression. Funding limitations and a variety of programs to be highlighted make it difficult to generate the public support needed. As a result, citizens lack enough information to understand the STW's programs and initiatives, and in many cases have overly high expectations of what can be accomplished with existing resources.

3.9 Internal Organizational Climate

All internal and external factors eventually coalesce to affect the internal organizational climate of the STW. During the SWOT process, several issues were noted that affect organizational climate, including:

- issues surrounding Limited Term Exempt (LTE) employees;
- cuts to the STW budget;
- physical facility limitations;
- lack of a unified vision;
- high expectations from outside stakeholders; and,
- poor communication and collaboration with other County agencies.

An organization's internal climate affects productivity, innovation, retention, and a number of other factors. Table 3.3 provides an overview of how external stakeholders perceive the STW's organizational climate. Figure 3.3 provides the same information, in graphical form, from the perspective of STW internal stakeholders.

Input from STW staff on what needs to change, what needs to continue, and what needs to stop was varied, but can be roughly broken into:

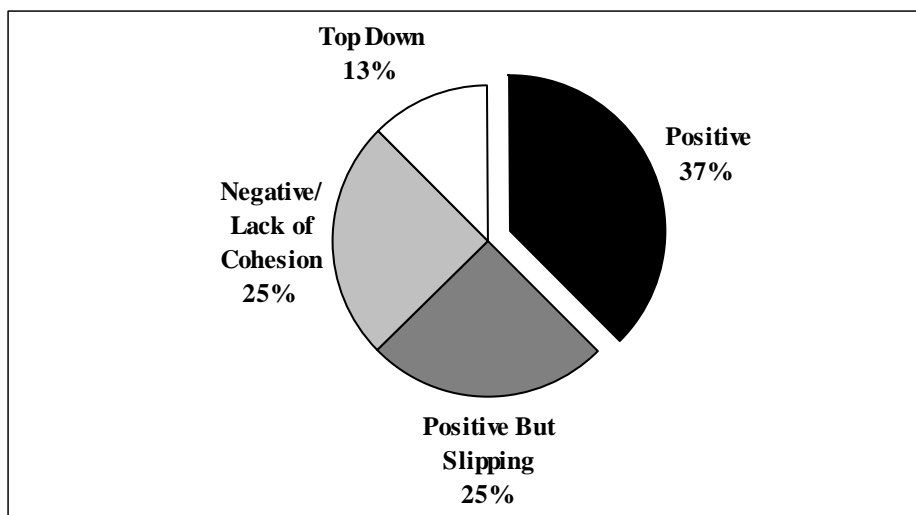
- need to enhance communication between leadership and staff;
- need for additional hires and to make LTEs into full time employees; and,
- need for more flexibility in meeting solutions presented to the STW.

A more detailed assessment and analysis of the entire SWOT process will be used as part of the STW's Strategic Plan process.

Table 3.3: External Perception of STW's Organizational Climate

Staff Level	
Conflict	<ul style="list-style-type: none"> Haven't seen any real conflict among staff. There does seem to be a line between younger staff and old-line thinking. Stress of change. Introduction of Core Values seems to have created some internal strife. All together, strategizing and organizing can get overwhelming. Significant stress between STW and Office of Site Development Services.
Good/Improving	<ul style="list-style-type: none"> Have always been very responsive to requests. The climate has improved from very negative in terms of accepting new ideas.
Leadership	<ul style="list-style-type: none"> Can't figure out who is in charge. Can't figure out the relationships between the different players and divisions. Bureaucratic. View that the County feels that its employees need to be better empowered.
Management Level	
Leadership	<ul style="list-style-type: none"> Need to follow through more. Many issues start with a bang, but then don't come to any cohesive conclusion. Don't know if there is buy-in at all levels of management. Management must recognize that this is not a static area. It must be dealt with aggressively or it will get much worse.
Decision-Making	<ul style="list-style-type: none"> There seems to be a divide between the County and the developers. Somewhere between division level and department level, go from technical to policy. The County's political leadership tends to impose sub-optimal solutions.
Innovation	<ul style="list-style-type: none"> Some managers lack creativity and a willingness to tackle forward thinking solutions.

Figure 3.3: Summary of Internal Perception of STW's Organizational Climate



4 Conclusions and Next Steps

Presented below are some of the more important conclusions that can be taken from the Environmental Scan.

- 1) External demands will continue to drive the majority of initiatives in the STW. That is, agencies outside of the STW (Federal, State, and County) will largely drive internal programming. This does not diminish the importance of short or long-range planning; however, it does mean that planning for discretionary programming will be made more difficult.
- 2) Fairfax County's existing tax base is not likely to increase appreciably in the short term. It is unclear how a shift from new development to infill/redevelopment will ultimately affect the County's revenue generating capacity. Therefore competition with other County programs will remain high, unless new sources of funding are identified.
- 3) There will always be more work/programs than can be accomplished by the STW. Therefore the STW will need to think strategically about which projects or programs it will undertake in order to maintain acceptable standards of quality.
- 4) The STW's human resources have become overstressed due to taking on additional regulatory and planning functions (TMDLs, Chesapeake Bay, Regional Ponds, etc.) as well as maintaining an increasing facilities inventory without a corresponding increase in staff. The STW needs to benchmark the optimal staff necessary to achieve STW goals and find ways to increase and decrease staffing without jeopardizing programming.
- 5) Inconsistent public outreach efforts have led to misinterpretation or a lack of understanding of the STW mission and successes. A consistent program highlighting achievements and progress will bring the public to a better understanding of the need for stormwater programs.
- 6) Despite recent organizational and leadership changes in the STW and DPWES, it will be a long-term endeavor to shed old perceptions about how business is done. As a result, there will be continued confusion as to the STW's direction and mission. A consistent internal communications process within the STW is key to gaining staff-level trust in the organization's leadership.
- 7) Momentum caused by high-profile STW-related regulatory mandates, recent reports by the STW demonstrating the impacts of growth on water and ecological resources, and a generally friendly political environment towards stormwater issues can be used by the STW to enhance existing programming.

The next step for the STW is to utilize the information gained through the Environmental Scan, the SWOT process, and the results of the staff/external questionnaire in its Strategic Planning process.

APPENDIX A

List of Acronyms

ADA	Americans with Disabilities Act
BMP	Best Management Practice
BOS	Board of Supervisors
CBLAB	Chesapeake Bay Local Assistance Board
DCR	Department of Conservation and Recreation
DEQ	Department of Environmental Quality
DPWES	Department of Public Works and Environmental Services
EQAC	Environmental Quality Advisory Commission
F&R	Fire and Rescue
FCPA	Fairfax County Park Authority
FEMA CRS	Federal Emergency Management Agency Community Rating System
GASB	Government Accounting Standards Board
HPO	High Performance Organization
IBI	Index of Biological Integrity
IT	Information Technology
LTE	Limited Term Exempt
MSMD	Maintenance and Stormwater Management Division
OSDS	Office of Site Development Services
PFP	Pay For Performance
RIF	Reduction In Force
SPS	Stream Protection Strategy
STW	Stormwater Management Business Area
SWOT	Strengths, Weaknesses, Opportunities, and Threats
SWPD	Stormwater Planning Division
TMDL	Total Maximum Daily Load
VDOT	Virginia Department of Transportation
VPDES	Virginia Pollution Discharge Elimination System

APPENDIX B

Results of SWOT Analysis

STRENGTHS

1.	Emergency response.	
2.	Versatility in tasks/programs.	
3.	Institutional knowledge.	
4.	Not overly perfectionist → get more done/balancing rules, responsibilities and risks.	
5.	Talented workforce.	
6.	Good problem-solving skills → make things work.	
7.	Ability to reallocate resources within programs	
8.	Can do attitude “where there is a will there is a way.”	
9.	Good fiscal control.	
10.	(Tie) Incorporate technology and innovation. (Tie) In tune with existing impending regulations. (Tie) Diversity (people and opinions).	
Other:	<ul style="list-style-type: none"> • Good outreach to community. • Responsive to community. • Employee Involvement. • Good balance between old and new staff. • Volunteer services to outside causes. • Practical and realistic. • Attract quality staff/recruiting efforts effective. • Good infrastructure organizational support. • Everyone gets along/good working relationships. • Mature workforce. • Reorganization has fostered collaboration between planning and maintenance. • More recognition and influence due to reorganization – joining maintenance and planning under “Stormwater.” • Relationships/partnerships with those outside Stormwater. • Emergency response – do not respond “knee jerk” to political pressure. • Proactive programs. 	<ul style="list-style-type: none"> • Doing more with less. • Organizational policies and regulations. • Atmosphere of education and training (to some degree). • Ability and desire to learn. • More willing to take risks. • Leadership support (BOS, County Executive). • Realistically evaluate new ideas. • Open to change. • Stability of Fairfax County Government. • Pool of consultants and contractors available. • Reliable historical data. • In STW Planning, there have been sufficient funds. • Recognized leaders in the field (in various fields). • Awareness of external forces. • Good morale in Stormwater Management Branch. • Work well in teams. • Responsive to community. • Highly motivated, committed, productive, dedicated staff. • Safety conscious.

WEAKNESSES

1.	Limited Term Exempt employees create scheduling difficulties – no benefits/no leave for LTEs creates low morale – historical knowledge is lost when LTEs leave.	
2.	Inter-departmental cross-cutting outreach across county divisions – lack of communication and understanding.	
3.	Lack a sense of identity: what do we do for both the community and other county agencies. “Stormwater” leads to various interpretations.	
4.	(Tie) No dedicated funding source to accomplish what needs to be done. No way to fund strategically and in right order. (Tie) Opportunities for upward mobility are limited.	
5.		
6.	(Tie) Overall outreach efforts lacking. Pubic doesn’t always trust that the fixes proposed are actually best. (Tie) Policy level lack of integration between OSDS planning and implementation (through development process).	
7.		
8.	History of being reactive vs. strategists – government culture breeds the reactive stance.	
9.	(Tie) Losing too many well-qualified people to retirement – not being able to replace due to inadequate pay compared to other opportunities. (Tie) Projects driven by political influence vs. needs of community.	
10.	Focus on particular job.	
11.	Fixes of infrastructure are often short-term, not long-term. Costs more in long run.	
12.		
13.	Weakness in cross-training; if someone leaves, don’t have someone to move into job effectively – Rely too much on individual specialists, who if leave would really hurt organization.	
Other	<ul style="list-style-type: none"> Team paradigm still needs to fit within command and control structure. Hampers some innovation and initiatives. DPWES reorganization has led to “dis” organization for many there’s a lack of communication. Lack of programmatic integration both in branch and between divisions and departments. Past, didn’t get public buy-in to plans. Have fixed process, but still living with ramifications. Lingering perception is that the County is inflexible when it comes to regulations. Recruitment problem rather than retention. 	<ul style="list-style-type: none"> Have to go very far away to recruit means less vestment in work as it relates to local community. Internal communication breakdowns between working level and engineers and field staff. Management is so busy with outside meetings and coordination trying to react that they have little time to focus on actual management. Projects driven by political influence vs. needs of community. County values: “we value our employee” flies in the face of how LTEs are treated.

OPPORTUNITIES

1.	(Tie) Political support from the BOS (Tie) Healthy citizen interest in the environment	
2.		
3.	(Tie) Proactive watershed planning as appropriate – public support (funding). Proactively coordinate regs and go above and beyond (Tie) Federal/state grant opportunities, outside funding	
4.		
5.	(Tie) Heightened awareness due to negative visible conditions, e.g., West Nile Virus, stream degradation, etc) (Tie) Retrofitting of stormwater management facilities to BMPs through the County's redevelopment/revitalization plans.	
6.		
7.	(Tie) The environmental stewardship of the County executive's vision and mission (Tie) Collaboration with external councils and commissions that have a vested interest in environmental issues	
8.		
9.	(Tie) Changes to County's organizational structure that are environmentally supportive (Tie) The countywide focus on strategic planning provides opportunities for intra-County alignment, collaboration, etc. (Tie) Build on past successes	
Other	<ul style="list-style-type: none"> • Supportive comprehensive plan policy (environmental plan). • Chesapeake Bay 2000 goals. • Federal mandates -- support of water quality improvements. • Take advantage of changes to state Chesapeake Bay Regulations-- supportive of riparian initiatives and other changes as they occur. • Increase interagency communication/coop (Park Authority). 	<ul style="list-style-type: none"> • Visibility of work product. • Cooperate on regional level. • External – build on existing activities of environmental groups. • Existing natural resources (stream valleys).

THREATS

1.	Lack of consistent funding source and loss/reduction of funding – competing with County (schools, F&R, IT).	
2.	Frequent changes and misuse in management philosophy, e.g., HPO – next?	
3.	Overly high citizen expectations given resources.	
4.	Development community pressure, e.g., opposition to regulation, poor construction/inspection.	
5.	Lack of political and well organized grass roots buy-in/support for current programs.	
6.	Changing/new regulations (unfunded mandates) TRIB Sheet, TMDL, ADA, GASB, DAM (VA)	
7.	RIF/staff reduction.	
8.	Poor support/coordination with other County and outside Departments, e.g., FCPA, VDOT, (lack of unified County vision, strategy).	
9.	New initiatives (West Nile/public health/terrorism) emotions high, short notice – unplanned.	
10.	Facility limitations.	
11.	Privatization (perceived savings).	
Other	<ul style="list-style-type: none"> • Changing weather patterns, i.e., new TP-40 (rev.) current organizational alignment. • Change in political climate, e.g., new BOS, Governor, etc. • Tax Revolt(s). • Transportation inadequacy. • Population demographics coupled with changing expectations + work force. • “Failure” of PFP (morale, competitive pay, retention/recruiting). • Lack of knowledge of out total programs and responsibilities – stakeholders. 	<ul style="list-style-type: none"> • Perception of fat/waste in programs. • Dillon rule – hands are tied. • Indifference to organizational change (outsiders don’t care how needs are met – just meet them). • Undefined level of service. • Refusal by state and other agencies and neighboring jurisdictions to collaborate. • Shortage of sound science to accomplish mission. • State of economy.

APPENDIX C

Results of External Stakeholder Interviews

Q1: What have been our major accomplishments over the past five years? What action(s) can we take to leverage these accomplishments?

Area	Response
Innovation	<ul style="list-style-type: none">• (1) Gradual acceptance at the staff and leadership levels of more innovative techniques in stormwater management; acknowledgement of possibilities other than structural BMPs. Most difficult has been to convince MSMD; however, this has also been the area of greatest improvement. (2) Inviting Prince George's County to talk about experiences in innovative BMPs. (3) A more open atmosphere regarding finding innovative solutions to issues and problems and a liberalization of BMP requirements to allow for innovative techniques and non-engineered solutions. (4) Tentative acceptance of innovative BMPs.• Allowing trees and other vegetation to be planted in stormwater management facilities.
Program Development	<ul style="list-style-type: none">• Participation in the Infill and Redevelopment Study that resulted in stormwater-specific recommendations.• Tree preservation efforts have made a lot of forward progress.• Re-mapping of Fairfax County's streams.• Increased sensitivity to biological/ecological concerns. Demonstrated through participation in the Sugarland Run biological assessment.
Stream Protection Strategy	<ul style="list-style-type: none">• (1) Getting the BOS to fund the SPS Baseline Study and to move forward with watershed plans. (2) The SPS Baseline Study. (3) The SPS Baseline Study. (4) Moving forward with the Stream Protection Strategy.
Partnerships	<ul style="list-style-type: none">• Making a better effort to reach out to non-profits and community groups who can be allies in obtaining funding/achieving buy-in for planning.• Partnering with other entities to engage in stabilization of degraded streams.• DNA typing for fecal coliform bacteria sources related to TMDLs. While the County wasn't the lead, the partnership resulted in valuable data.
Internal Communications	<ul style="list-style-type: none">• Hiring a person who attends meetings of the Environmental Crimes Task Force. Has resulted in improved communications.

Q2: What have been our major shortfalls over the past five years? What actions can we take to minimize the impact of these shortfalls?

Area	Response
Planning	<ul style="list-style-type: none"> • (1) Much of the County's stormwater planning is done on an ad-hoc basis and as a result, the system is not cost-efficient. (2) Planning is done on a property-by-property basis with little regard for the ultimate design. (3) Less and less confidence that regulators have a comprehensive view on what it is that they are doing or trying to achieve. Some regulations probably contribute little to stormwater quality. • (1) Not having an up-to-date comprehensive stormwater management program for the County. Implementation of the existing regional stormwater management plan has been limited – this should have been updated long ago. Have a plan but no effective way to implement it. (2) Not sure what is happening with regional ponds. • Stormwater management recommendations of the Infill and Redevelopment study are not completely adequate. • The County has not paid nearly enough attention to reducing impervious surface areas that are the root of most stream degradation and the need for structural controls. • Inability to respond to the problem of streams being impaired for bacteria, which has lead to the implementation of TMDLs. • There is a lot of focus on local streams, without always looking to see how larger regional issues such as the Chesapeake Bay Agreement might impact how things are done.
Innovation	<ul style="list-style-type: none"> • (1) Reluctance to accept new ideas. Too great a reliance on what is in the PFM. (2) Difficulty in getting innovative practices approved. The County is holding the industry back on innovative techniques by insisting on only going half way. (3) Lack of implementation of new and innovative approaches to stormwater management. • Not allowing the use of bioretention facilities on private lots has been a big problem and sets these facilities up for failure. • Not allowing trees to be planted within the BMP basin when water depth allows it.
Organization	<ul style="list-style-type: none"> • (1) Lack of coordination between the MSMD and the Office of Site Development Services especially regarding implementation of the 2000 innovative BMP guidelines. (2) There is too much of a split between OSDS and MSMD. If the plan is approved, then MSMD needs to accept it an not present additional questions or changes to the developer. • Scattershot review and approval process for innovative stormwater management techniques. • Perspective is that things are a lot more complex due to over regulation. • Reporting of routine inspection activities could be strengthened to make other agencies aware of potential future issues and to maximize the efficiency of field operations.
Program Development	<ul style="list-style-type: none"> • Haven't adopted the 1999 Department of Conservation and Recreation Stormwater Management Manual. Here we have a State-wide manual, but it is not accepted by the County. • The County's existing digital floodplain information is not very good. Fairfax was ahead in the 1970s and then got way behind. • The County still doesn't have an adequate erosion and sediment control program. • Don't have the staff or funding to monitor or maintain BMPs for which the County is responsible.
Partnerships	<ul style="list-style-type: none"> • Reluctance to acknowledge the contributions of outside groups.
Funding	<ul style="list-style-type: none"> • Single most important shortfall is the failure to secure a dedicated funding resource.

Actions to minimize shortfalls:

- Develop a more focused plan that lays out reasonable expectations and then implement the plan. Don't continually second-guess approaches.
- Innovative BMPs need to actually be incorporated in the PFM.
- The regional ponds issue needs to be addressed one way or another soon in order to stop decisions from being made in a vacuum.
- The County's entire approach to erosion and sediment control needs to be re-thought.
- Need to emulate Loudoun County and update and provide digital floodplain studies for the entire County.
- The County needs to document and publish its data more frequently.
- Secure a dedicated funding source.
- Need to formalize the County's ability to take a macro-view of stormwater issues (EPA, TMDLs, NPDES, etc.).
- The County needs to perform an economic analysis of regulations and policies to make it clear how much stormwater management is costing us, and to provide citizens and politicians with an opportunity to decide whether this is the best use of funding. Engage the private sector to arrive at a balanced view.
- The County needs to have a more systematic and logical approach to stormwater management.
- We need to have a dedicated research program to help us determine the best courses of action. In the long-run, this will save us money.
- Create a better feedback loop between OSDS and MSMD to ensure that MSMD concerns over design impacts on maintenance are taken care of before site plan review and approval.

Q3: What are our major strengths? How can we capitalize on these strengths strategically and operationally?

Area	Response
Technical Staff/Employees	<ul style="list-style-type: none">• (1) Technical staff are pretty competent. (2) Employees are a major strength. They are interested and motivated. (3) Very dedicated staff, generally have had positive experiences. (4) Young energetic group of employees who are very knowledgeable in their fields. (5) Good quality staff. (6) Overall, good solid people who are willing to work under tough budget conditions and lots of unfunded mandates.• Very good stream analysis team.• Excellent floodplain engineers.
Organization	<ul style="list-style-type: none">• High degree of sophistication, which affords many opportunities not available in other jurisdictions.• Willingness to meet in person – while we might not like the answers – staff is willing to engage stakeholders.• Another strength is the Environmental Coordinating Committee.
Leadership	<ul style="list-style-type: none">• Leadership at the very top levels of DPWES is open minded and very active.• Good leadership and an interest in the public good at the department and division levels. Leadership is a little less solid as one goes further down the chain of command.
Partnerships	<ul style="list-style-type: none">• Willingness to partner with other entities on important projects.
Resources	<ul style="list-style-type: none">• Decent resources.

Actions to capitalize on strengths:

- Capitalize on technical staff/employees by giving them the freedom to use their heads and not be tied to the political process.

Q4: What are the major external factors – economic, political, regulatory, geographic, demographic, and competitive – that will affect us over the next five years? What actions can we take to effectively deal with them?

Area	Response
Political/Economic	<ul style="list-style-type: none"> • Political environment, i.e., Board of Supervisors, will dictate the mission and the ability to finance plans. • Clearly the budget is the biggest external factor. • The Board of Supervisors failure to consider a stormwater utility has been a tremendous blow to the stormwater program. It will take a lot of political will, but don't see this happening in the next few years. • Biggest is the combination of economics and politics. Stormwater program needs money, the problem is how to use the political process to get this money. • Reluctance of the Board of Supervisors to implement a utility fee.
Regulatory	<ul style="list-style-type: none"> • Regulatory change from the State and federal levels. Example are the recent amendments to the State Chesapeake Bay Preservation Regulations. • Current Chesapeake Bay Preservation Ordinance issues will have a substantial impact on the number of areas regulated by the County. • Difficulty in enforcing erosion and sediment control measures. It is a budget issue in that more staff is needed, but it is also a management issue in that there is probably more that can be done with existing staff. • TMDLs and getting a hold of that whole process before it takes on a life of its own. Chesapeake Bay Agreement and Tributary Strategies - load allocations are due in April, and out of that will come nutrient and sediment load caps. Revised Chesapeake Bay watershed standards will be moving forward and are likely to lead to revisions to the State's 303(d) impaired waters list. This could set the stage for even more TMDLs. The Bay Program at the federal level will take on a more regulatory flavor. More TMDLs will need to be developed for benthic impairments. This will be a huge challenge since the answer will largely be to control a combination of pollutants rather than one single pollutant.
Demographics/Development	<ul style="list-style-type: none"> • As redevelopment of lower density areas to higher densities occurs, there will be a greater potential for dumping and runoff to affect local streams. • Demographically, if the County continues to grow, there will be more and more impervious surface cover to manage. • The County is built-out. The PFM and other regulations are oriented towards large scale new development. We are moving into an infill and redevelopment mode and will be developing parcels that were once passed over due to their less than desirable conditions.
Other County Agencies	<ul style="list-style-type: none"> • Needs to be a greater connection between OSDS and STW.
Public Perception	<ul style="list-style-type: none"> • Public perception is that all the STW does is study. STW is following the same path with its watershed planning process. All the money will be used up in the planning and then there won't be anything left for effective implementation. The result will be lowered expectations.

What actions can we take to effectively deal with them:

- From a fiscal standpoint, we should consider other, more stable funding sources.
- The major action to deal effectively with these issues is financial, what funds will be available.
- Need to generate additional funds through new development to help offset the impacts on older development.
- Planning for offsetting impacts should be through an extension of the SPS process.
- Need to find more innovative ways to fund. To do this, the STW needs to build a stronger constituency.
- Should look to what other counties have done with respect to stormwater utility. It is no longer a new and/or bold concept. It is a fact of life that these things need to be paid for.
- One technique is a stormwater utility. Staff needs to figure out how to get the political support.
- The County should pick one or two watersheds to study, plan, and fix and make it a model to foster support. Make people see how well it can work if adequately funded and make them want to have the same.
- Need to be able to communicate and have examples of what the benefits are. Large HOAs might be a particular target, since many of them already manage their own systems and would be likely to reject a utility.
- Legal issues include when a developer is entitled to get bond money back for erosion and sediment control facilities.
- The County should consider some sort of enterprise fund so that it has the capacity to react to all these new demands. Eventually, TMDLs, Chesapeake Bay Agreement, Tributary Strategies, and NPDES MS4 will all be tied together.
- The Stream Protection Strategy should position the County well, but the County will need to look at retrofits and rehabilitation.
- The County will need to shift its focus and momentum from a new development standpoint to a redevelopment and infill standpoint. Not sure if this change is happening fast enough, particularly with regard to the PFM.
- Time is right for a performance based PFM to allow for more agility. This all fills into the need for more research.

Q5: What are the major opportunities that lie before us in the next five years? What can we do to capitalize on these opportunities?

Area	Response
Program Development	<ul style="list-style-type: none"> We are in a situation where we are almost a mature County. However, there will be continued changes and how we manage these changes will be important. Complete and follow-up on stream assessments. Use the momentum that these efforts have created to actually implement recommendations and remedial actions. Research. Take a step back and do something coordinated.
Policy and Regulation	<ul style="list-style-type: none"> There might be an opportunity to reduce impervious surfaces due to an increasing interest regionally in smart growth. Prune regulations. There are many serious situations that need to be addressed or they will become more serious. Legislate through plans and ordinances the use of low impact development to ensure that sensitive natural resources are protected from runoff.
Stakeholder Involvement	<ul style="list-style-type: none"> (1) Opportunity to education the public. Particularly children. County should embrace things like this. (2) There is a lot of public awareness that streams are important.
Funding	<ul style="list-style-type: none"> Opportunity for stormwater utility. Staff people need to convince the Board that this needs to be done. To join forces with other local governments and the State to go after highway money to deal with stormwater. Transportation now is linked with clean air, why not clean water? Could be a major source of revenue.
Innovation	<ul style="list-style-type: none"> We have the opportunity to be creative. One way or another, the next few years will set the tone for a long while.

What can we do to capitalize on these opportunities:

- Now is the time to plan.
- Work in greater partnership with the Park Authority and nature centers. Link flora and fauna with other environmental issues such as stormwater.
- The County should capitalize on [interest by the public in smart planning] by looking at the Comprehensive Plan and the Zoning Ordinance and amending as needed. Need to look at cluster zoning provisions particularly hard for how it can both protect and be a problem for stormwater quality.
- The STW needs to take that [public] awareness and show that the situation can actually be improved.

Q6: What are the major risks to our continued growth and our successful operation? What can we do to resolve them or contain their impact?

Area	Response
Planning/Program Development	<ul style="list-style-type: none"> • (1) As the County matures, there will be more emphasis on maintenance and retrofit. (2) Risk in not maintaining what we have, will cost more later if we don't. • The current programming is not successful. As is, there are numerous instances of severe downstream impacts by development. Stormwater management takes careful implementation from initial development plans through actual development to ensure minimal impacts. Continued deterioration of streams will make resolution of the problem more difficult in terms of funding and implementation. The longer you let it deteriorate, the more expensive it becomes and the greater the chance that political leadership will give up. • Lack of education on the part of the citizenry, both in terms of willingness to fund efforts as well as actual impacts to the stormwater system and the difference between the sanitary and storm systems. • The Board of Supervisors is the major risk. If the Board doesn't know what you are all about, then they are unlikely to increase budgets. Most people aren't aware of the good things that have been done to date. • Perception that the STW is inefficient. The Regional Pond study is one example. Has dragged on for years. The politicians notice these sorts of things. The STW doesn't scope out work effectively. Right now, the STW seems to want to do something for everyone, and the result is that not much is getting done. • We will continue to build facilities that do not work well together. Eventually, we will start to go backwards as we are unable to maintain and/or justify our systems. Pollution will get worse.
Funding	<ul style="list-style-type: none"> • Lack of money is the major risk - not enough to do what needs to be done. • Money is the single biggest risk - politicians don't get elected running on a stormwater platform. • Budget stagnation.
Innovation	<ul style="list-style-type: none"> • There is a risk if we fail to develop new technology as challenges become greater and greater.

What can we do to resolve them or contain their impact:

- Maintenance needs to be a stronger consideration in the future and the County needs to plan for this eventual conversion. The quality of construction today will dictate how hard a job maintenance will be in the future.
- We really need to cost up the solutions and come up with an honest price on logical answers.
- Need to address education more proactively, especially with those who do not speak English as a primary language. Much of the educational effort will fail if multi-lingualism is not taken into account.
- The County needs to set and stick to its deadlines.
- Need to prioritize and focus.
- Both divisions in the STW needs to create some success stories and blow their own horns. Can capitalize on what has already been done, but need to create new successes as well. Develop success stories and get them into the face of the public.

Q7: Who are our major stakeholders? Are there additional stakeholders that should be served? If so, which and why?

Area	Response
Citizens	<ul style="list-style-type: none"> • The major stakeholder that is currently underserved is the immigrant population. Educating these immigrants on environmental issues will be critical to the County's efforts in the future. • People who don't pay attention because they don't know the problem is out there. Public education is key, and the County should look for ways to involve more citizens in monitoring and even enforcement of regulations. • The real question is how to get the average person involved. We haven't taken the larger issues to the public.
Private Industry	<ul style="list-style-type: none"> • Consultants/private industry. Building industry. They are perceived to be at odds with the County. The County needs to develop its success stories with the building industry so that each can take credit. With respect to who need to connect to more? Need to connect with the actual homebuilders, not the corporate conglomerates, and smaller builders. They might be more willing to do something more innovative since they are locally based. • Developers/construction industry. • Northern Virginia Building Industry Association, National Association of Industrial Office Properties, Chamber of Commerce.
State/Federal	<ul style="list-style-type: none"> • The Department of Environmental Quality should be more involved. Both DEQ and the County are responsible for not engaging each other better. Army Corps of Engineers should also be more involved, but they are really hurting for staff. • Need to interface more with federal employees who are also involved in environment/stormwater management and use them as an asset, or for advocacy. • Individuals with an interest in the larger Bay community.
Community Associations	<ul style="list-style-type: none"> • Community associations. They own a lot of the land on which stormwater management efforts will eventually need to occur. • HOAs, particularly those that maintain their own stormwater management ponds.
Civic Groups/Environmental Groups	<ul style="list-style-type: none"> • Fairfax Federation of Citizens Associations, Audubon Naturalist Society, Sierra Club, League of Women Voters. • Environmental and community groups.
All Underserved	<ul style="list-style-type: none"> • All stakeholders have an interest: individuals, developers in so far as their investment is concerned, businesses in that they tend to have large impervious surfaces that impact water quality, and downstream residents who have to live with the effects of upstream development. The County hasn't paid sufficient attention to any of the stakeholders. They are willing to be pulled along, but not proactive in most areas. Too much day to day focus. Not enough time to look forward to propose new programs or processes.

Q8: What must we do to achieve continuing vitality and support? Are new directions required? What are they? Why are they needed?

Area	Response
Planning and Follow-Through	<ul style="list-style-type: none"> • The vitality is only focused on a couple of specific projects. The County need to encourage programs that look to the future to ensure protection. Good plans must be pursued, and continuing support will come if stakeholders actually see results. • Need to be holistic in approach, engage the private and public sectors in planning and actual implementation.
Education	<ul style="list-style-type: none"> • Need to engage schools and citizen groups to actually get into the streams - need hands on experiences. • Citizens are concerned and will likely support actions toward protection but they need to see what they are paying for and feel comfortable that something is actually being accomplished.
Partnerships	<ul style="list-style-type: none"> • Need to be open minded, creative, and good listeners. In order to do this, it is necessary to establish public-private partnerships.
Flexibility	<ul style="list-style-type: none"> • Flexibility.
Funding	<ul style="list-style-type: none"> • Need funding mechanism to retrofit existing facilities and need the political will to do this. Half of the County's BMPs are improperly maintained or improperly installed. The system needs to be maintained or else staff will lose support.

Q9: What are the three most important tasks that we must face over the next 5 years? Why are they important?

Area	Response
Planning	<ul style="list-style-type: none"> • (1) Need to have a better handle on how the County will plan to improve stormwater problems through redevelopment. Need to have comprehensive, and relatively specific plans for how this will happen. (2) Do something about redirecting momentum to infill and redevelopment from new development. (3) Maintain the system and enhance it through new development and redevelopment. • (1) Come to resolution on how the County will proceed with the regional pond system. The County really needs a new plan. (2) Resolution of the regional pond question - whether they are good or bad and what policy to ultimately pursue. Concern is that stormwater waivers for developments were granted with the idea that regional ponds were planned. However, in the meanwhile, there has been a tremendous impact on local streams. If ponds are not going to happen, then the County must go back and retrofit these areas as a top priority. • Developing a watershed plan that is implementable and has public support. Start a pilot. This will allow the County to learn from its mistakes rather than repeating them 30 times. • Conforming stormwater program to long term watershed planning taking into account TMDLs and other regulatory structures including Tributary Strategies and the Bay Program. • Establish a research capability. • The County needs to have someone looking at the organization from a total system view. Look not only at controlling impacts, but also looking at sources including transportation, etc. • Pay more attention to erosion and sediment control and reducing impervious surfaces. These are the things that make it necessary to manage impacts in the first place. Incorporate all these plans into implementation tools such as the Comprehensive Plan and the Zoning Ordinance. Tie all of these together.
Funding	<ul style="list-style-type: none"> • Stormwater management fee, to get a steady stream of income. This will be critical in the long term for implementation, and must be preceded with education. • Need to determine how stormwater management will be financed, and be creative about funding sources. • Need to be willing to invest in the program, and there must be a willingness to find ways to fund what needs to be done. • Secure a dedicated source of revenue to actually implement planning.
Education	<ul style="list-style-type: none"> • Strengthen the County's efforts to educate the citizenry on the difference between the sanitary and storm sewer systems. • Establish a visible and regular vehicle or channel for communications with the public. • Take the immigrant population into account in educational programs. Bring the programs to them.
Innovation	<ul style="list-style-type: none"> • (1) Allow/make it easier to implement innovative BMPs. (2) Reduce the hardcore reliance on the statement "it must be in the PFM." • Assurances that new development has minimal impacts on downstream waters through local impact development techniques.
Organization	<ul style="list-style-type: none"> • Fix internal review/inspection and maintenance problem. Once a plan has been accepted and approved, maintenance shouldn't be able to say you can't do something. Approval should be the last shot. Fix this with a better feedback loop from maintenance to OSDS.

Q10: What is your perception of the current climate in the organization? What are the greatest issues you see in the organization? What would you like to see change? Continue? Stop?

Area	Response
Conflict	<ul style="list-style-type: none"> • Haven't seen any real conflict among staff. There does seem to be a line between younger staff and old-line thinking. • Stress of change. Everyone has regular jobs to do, but recently, there has also been the introduction of Core Values, which seems to have created some internal strife. Hope that these outside planning efforts don't undermine what needs to be done or take too much time away from other work. Personnel reviews take a lot of time. All together, strategizing and organizing can get overwhelming. • Get a sense that STW and Office of Site Development Services are at each others throats.
Good/Improving	<ul style="list-style-type: none"> • Have always been very responsive to requests. No problems. • The climate has improved from very negative in terms of accepting new ideas. Would like to see this continue. Temper the engineering mentality of the organization with biologists and planners. This is happening slowly and should continue.
Leadership	<ul style="list-style-type: none"> • Can't figure out who is in charge. Cant figure out the relationships between the different players and divisions. • Bureaucratic. View that the County feels that its employees need to be better empowered. However, the County needs to be very careful in moving forward with this. It could result in even less coordination. And, not even sure if many of the employees even want this empowerment.

Q11: What are the greatest issues you see in the management group? What would you like to see change? Continue? Stop?

Area	Response
Decision-Making	<ul style="list-style-type: none"> • There seems to be a divide between the County staff and the developers. Sometimes, personal feelings about a development project get in the way. Staff need to have a can-do attitude, and if a developer has proposed something that is legally doable, County staff needs to help make it work within the confines of the rules and regulations. • Somewhere between division level and department level, go from technical to policy. The County's political leadership tends to impose sub optimal solutions on the technical community. The solution is to have better research to back up decisions. There is currently not good research information to push decisions one way or another. As a result, decisions are mediocre.
Leadership	<ul style="list-style-type: none"> • Need to follow through more. Many issues start with a bang, but then don't come to any cohesive conclusion. Even if the answer is that we are not going to do something, an actual decision should be made. • Buy-in from subordinates. Don't know if there is buy-in at all levels of management, and this permeates to the rank and file. • The County can't afford management that is go along to get along, especially in this area. Management must recognize that this is not a static area. It must be dealt with aggressively or it will get much worse.
Innovation	<ul style="list-style-type: none"> • Some managers lack creativity and a willingness to tackle forward thinking solutions. Some training could overcome this.

Q12: What would you expect the organization to look like in five years?

Response

<ul style="list-style-type: none">• Hope that there would be adequate staff to maintain the current level of effort and funding to do planning as the system gets older and the maintenance burden gets larger. There should be funding to do more proactive maintenance, rather than chasing problems after they have occurred.
<ul style="list-style-type: none">• Lean, mean, flexible machine. Is a perception that the rank-in-file is not very reachable after 4:30 PM. Need to overcome this perception and get rank-in-file involved in outside meetings and coordinating with the public as well.
<ul style="list-style-type: none">• I expect that the organization will look like it does now. I hope that it will have a good deal more of a biological bent to it. Hope that we have adequate funding and that our efforts turn to retrofitting. This is almost by necessity as the County builds-out and this will require the County to look seriously at new technologies and techniques that are better suited to retrofit.
<ul style="list-style-type: none">• Separate plan review totally from operations and maintenance. There is too much second guessing on part of maintenance division after all other approvals have been met. All County projects need to be reviewed like everyone else. This would help the County to fix the review process. They would get frustrated too.
<ul style="list-style-type: none">• Expect is to be similar to what it looks like now. Hope, however, that managers at all levels would be more industrious and forward looking, and fully aware of the necessity for timely action and resolution of stormwater issues. If the leadership can get excited about what they are doing, this will pervade the entire business area.
<ul style="list-style-type: none">• If the County had a viable independent fund, it would develop the watershed management plans and start to actually implement action strategies.

APPENDIX D

STW Related Comprehensive Plan Objectives and Policies

Environment, Objective 2 “Prevent and reduce pollution of surface and groundwater resources. Protect and restore the ecological integrity of streams in Fairfax County.”

- Policy a. Maintain a BMP program for Fairfax County and ensure that new development and redevelopment complies with the County’s BMP requirements.
- Policy b. Update BMP requirements as newer, more effective strategies become available.
- Policy d. Preserve the integrity and scenic and recreational value of stream valley EQCs when locating and designing storm water detention and BMP facilities.
- Policy f. Where practical and feasible, retrofit older stormwater management facilities to perform water quality functions to better protect downstream areas from degradation.
- Policy g. Monitor the performance of BMPs.
- Policy i. Monitor Fairfax County’s surface and groundwater resources.
- Policy k. For new development and redevelopment, apply low-impact site design techniques such as those described below [omitted], and pursue commitments to reduce stormwater runoff volumes and peak flows, to increase groundwater recharge, and increase preservation of undisturbed areas.

Transportation, Objective 1 “Fairfax County should provide for both through and local movement of people and goods through a multi-modal transportation system that places the maximum practical emphasis on alternatives to the single-occupant vehicle.”

- Policy a. Plan for motorized and non-motorized transportation facilities and services in accordance with transportation elements indicated in the Transportation Plan Map.
- Policy c. Accommodate inter-County and through trips with the Interstate and Primary Highway Systems, Metrorail, the Virginia Railway Express, and high occupancy vehicle facilities.
- Policy d. Design transportation facilities and provide services to accommodate the needs of the mobility-impaired.

Transportation, Objective 2. “Fairfax County should seek to increase the number of commuters using non-motorized transportation and public transportation (i.e., rail, bus, carpooling, and vanpooling) so that by the year 2000, 60% of County commuters to the metropolitan core, 20% of the commuters to the Tysons Corner Urban Center, 15% of the commuters to Suburban Center and Transit Station Areas and 5% of other County commuting work trips will use public transportation, and 3% of all trips will be made by non-motorized (pedestrian and bicycle) transportation.

- Policy b. Provide mass transit facilities (such as rail transit, commuter rail and/or HOV lanes) in major radial and intracounty commuter corridors including the Shirley Highway, I-66, the

Fairfax County Parkway, the Beltway, and the Dulles Access/Toll Road. Preserve rights-of-way for track and station sites where appropriate. Base the selection of the preferred mode in each corridor upon the results of detailed corridor studies.

- Policy d. Establish and/or expand park-and-ride lots along major intercounty and intracounty corridors and at potential future modal transfer points such as rail stations in order to promote transit and HOV usage.
- Policy g. Provide non-motorized access (e.g., sidewalks, pedestrian crosswalk signals and markings, trails, and secure bicycle parking) and user amenities (e.g. paved waiting areas, bus shelters and route/schedule information) to make transit services and facilities more convenient and attractive.
- Policy h. Provide for effective management and maintenance of County-owned transportation facilities, including park-and-ride lots, bus garages, and FAIRFAX CONNECTOR vehicles.
- Policy q. Seek to establish, with assistance of all employers, including the private sector and all levels of government, incentives and disincentives in order to reduce single occupant automobile use. These might include flexible and alternative work schedules, transit pass programs, dedicated bus/van transportation between employment centers and designated transit centers, alternative parking arrangements, provisions for adequate sidewalks and trails, and related measures to promote transit ridership, ridesharing, bicycling, and walking.
- Policy r. Work with Fairfax County Public Schools, private schools, and area colleges to establish programs for encouraging the use of bicycling, walking, carpooling and transit, including school buses.
- Policy t. In cooperation with MWCOG and other local jurisdictions, develop on demand carpooling/ridesharing system. Actively promote and market public transit, ridesharing, bicycling, and walking.
- Transportation, Objective 4. “A comprehensive network of trails and sidewalks should be provided as an integral element of the overall transportation network.
- Policy a. Plan for pedestrian, bicycle and bridle path/hiking trail system components in accordance with the Countywide Trails Plan.
- Policy c. Provide for bicycle and pedestrian features, including clearly marked sidewalks and trails, and marked crosswalk and pedestrian signals, in the construction and reconstruction of roads and bridges.
- Policy d. Establish trails and/or sidewalks in conjunction with roads and stream valleys as indicated by the Countywide Trails Plan.
- Policy e. Provide sidewalks and/or trails which link residential concentrations with transit stations, mixed-use centers, shopping districts, recreational facilities, and major public facilities, and provide for pedestrian circulation within mixed use centers.
- Policy f. Provide sidewalks on both sides of streets in commercial areas.
- Policy g. Use open space/conservation easements where appropriate to implement the Countywide Trails Plan.
- Transportation, Objective 8. “Public safety should be ensured both for users of transportation facilities and services and for the general public.”

- Policy g. Reduce conflicts among pedestrians, bicyclists, and motorists and correct unsafe conditions for walking and bicycling.
- Revitalization, Objective 2. “Fairfax County should address long term infrastructure financing needs in designated Revitalization Areas recognizing that additional tax revenues are generated by revitalization projects.
- Policy b. Identify and capitalize infrastructure improvements that complement and sustain the revitalization efforts.



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